

Import libraries

```
In [1]: # Python libraries
import os
import sys
import pandas as pd # for data manipulation
import numpy as np # for data manipulation
import tensorflow as tf
from sklearn.model_selection import train_test_split
from datetime import datetime
import time

# Plotting
import matplotlib.pyplot as plt

# To enable LaTeX and select a font
plt.rcParams.update({
    "text.usetex": True,
    "font.family": "sans-serif",
    "font.sans-serif": "Helvetica",
})

# Using ipynb import functions defined in other nb
sys.path.append("myfun/")
from ipynb.fs.defs.myfun_load_dataset import *
from ipynb.fs.full.myfun_nn import *
from ipynb.fs.defs.myfun_plot import *
```

2023-09-12 00:31:06.570149: I tensorflow/core/platform/cpu_feature_guard.cc:193] This TensorFlow binary is optimized with oneAPI Deep Neural Network Library (oneDNN) to use the following CPU instructions in performance-critical operations: SSE4.1 SSE4.2 AVX AVX2 FMA To enable them in other operations, rebuild TensorFlow with the appropriate compiler flags.

Tensorflow/Keras: 2.11.0
sklearn: 1.3.0

Data Acquisition

```
In [2]: # Load the dataset
par_dir = os.path.dirname(os.getcwd()) # parent dir
dir_name = par_dir + "/NN-interaction"
```

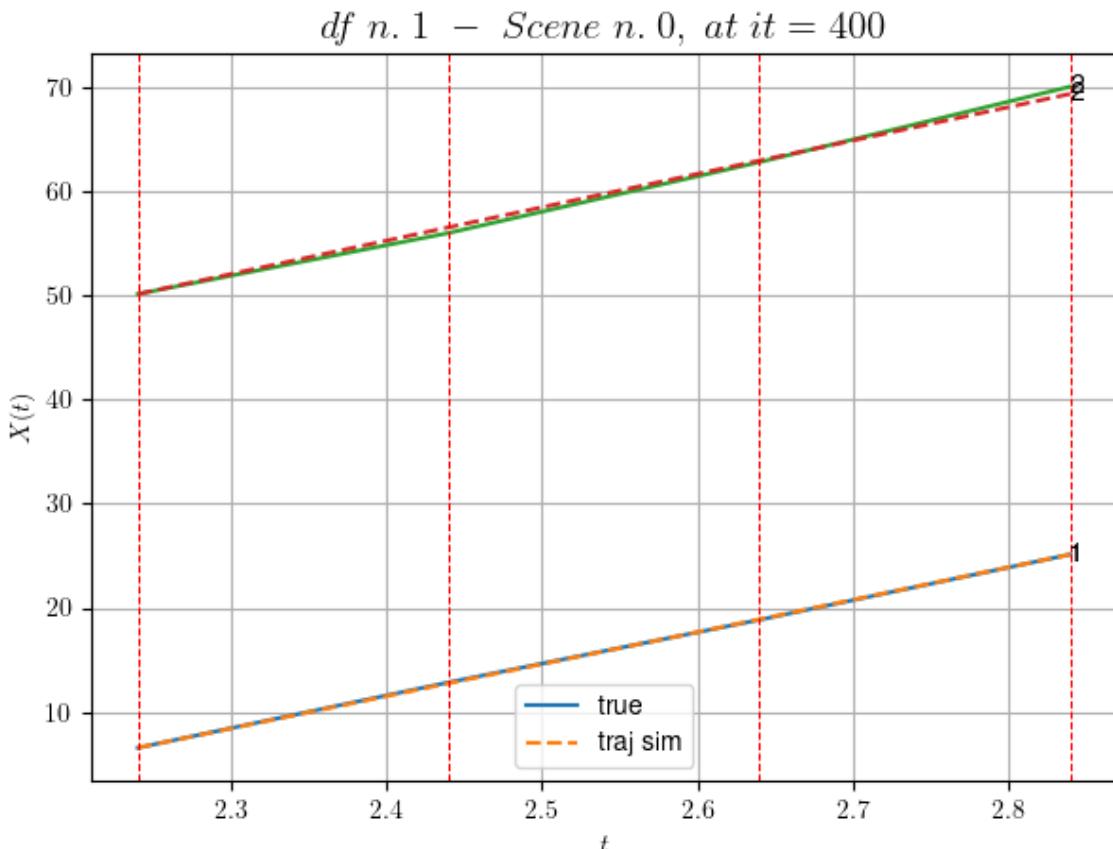
```
In [3]: processed_flag = 'pre'
# load the data
_, dflist = load_dataset(dir_name, processed_flag)
dataset = dflist
```

```
In [4]: # params
DOE =[1,4,1] #Design of experiment
v0_guess = 30
NUM_ITER = 500
LEARNING_RATE_v0 = 0.5
flag_save = True
```

NN: 1-4-1

```
In [5]: info_nn4 = solve_nn_dataset(DOE, v0_guess, dataset, processed_flag, N
```

```
-----
NN structure: 1-4-1
*****
*****
In df n.1/10 we have 109 scenes
df n.1, scene n.0/109
=====
=====
We have 3 time intervals inside [2.24,2.84]
* err= 0.10234565733590334
* Learning rate NN = 3.2804993679746985e-05
* diff = 1.1828597656915463e-08
```



For scene 0/109

```
* use LR_NN=5e-05 with err=0.5351511358169165 at it=24
* v0_scn_mean = 31.97726088611078
* MAE = 0.1023456392601226
```

```
=====
=====
df n.1, scene n.1/109
=====
=====
```

```
We have 2 time intervals inside [16.44,16.84]
- Time interval n.0: [16.44, 16.64]
  * y_true: [25.53040317]
  * v_ann: [27.886276245117188, 24.819169840097423]
```

```

-----  

- Time interval n.1: [16.64, 16.84]  

  * y_true: [29.53066068]  

  * v_ann: [27.11146354675293, 24.819169840097423]
-----
```

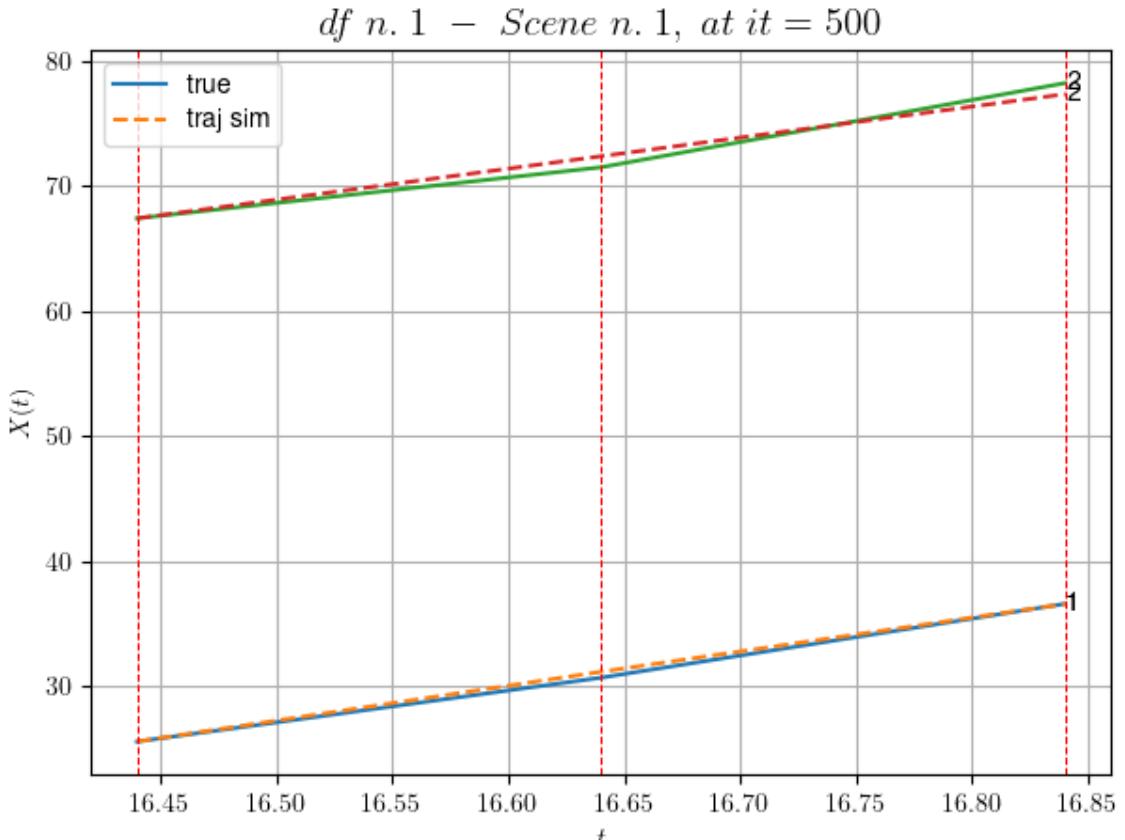
```

-----  

* err= 0.29718505651538113  

* Learning rate NN = 7.289998848136747e-06  

* diff = 4.503332916017122e-07
-----
```



For scene 1/109

```

* use LR_NN=1e-05 with err=0.8805581403313955 at it=24  

* v0_scn_mean = 25.026403046453993  

* MAE = 0.27362262134190507
=====
```

df n.1, scene n.2/109

```
=====
```

We have 3 time intervals inside [33.44,34.04]

```

- Time interval n.0: [33.44, 33.64]  

  * y_true: [32.35068864]  

  * v_ann: [32.29827880859375, 20.73562398523796]
=====
```

```

- Time interval n.1: [33.64, 33.84]  

  * y_true: [29.86084509]  

  * v_ann: [28.470439910888672, 20.73562398523796]
=====
```

```

- Time interval n.2: [33.84, 34.04]
  * y_true: [27.63106672]
  * v_ann: [29.052913665771484, 20.73562398523796]

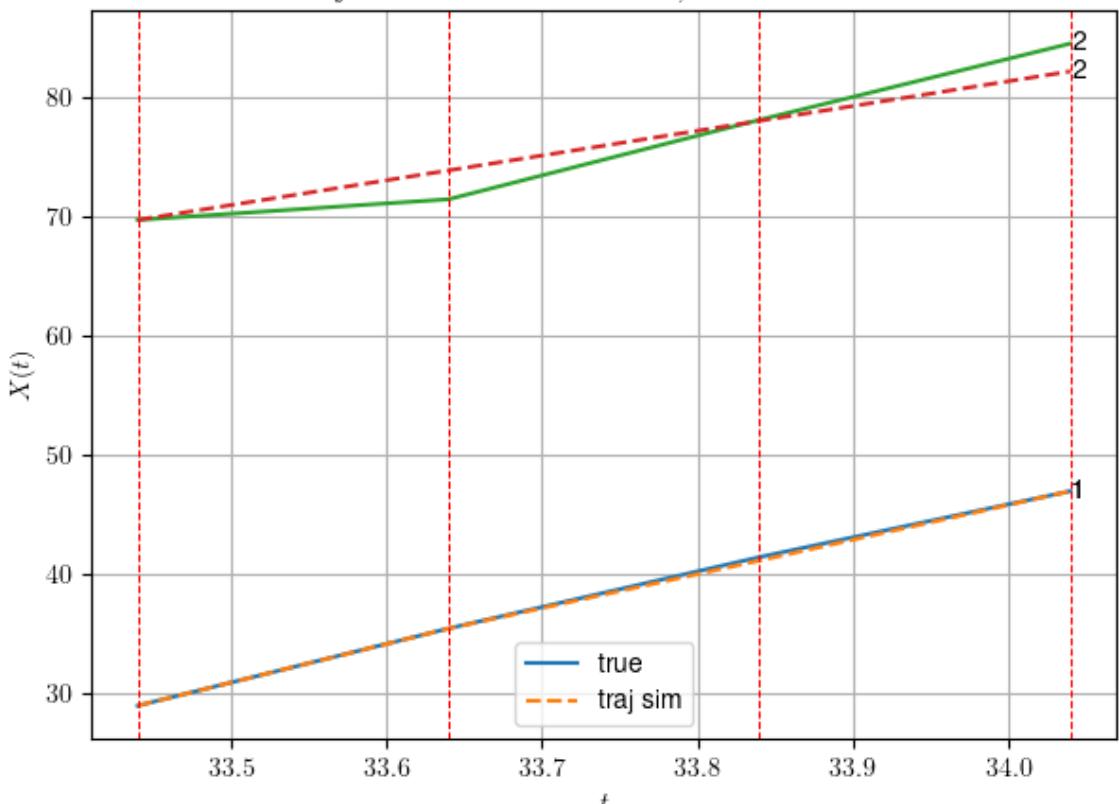
```

```

* err= 1.4203749722408643
* Learning rate NN = 5.9048988987342454e-06
* diff = 2.9214210663930373e-06

```

df n. 1 – Scene n. 2, at it = 500



For scene 2/109

```

* use LR_NN=1e-05 with err=5.233723373635861 at it=24
* v0_scn_mean = 21.106199025757572
* MAE = 1.2213665407915337

```

df n.1, scene n.3/109

We have 4 time intervals inside [37.44,38.24]

```

- Time interval n.0: [37.44, 37.64]
  * y_true: [20.4107518]
  * v_ann: [26.071210861206055, 27.29525416582103]

```

```

- Time interval n.1: [37.64, 37.84]
  * y_true: [26.78126893]

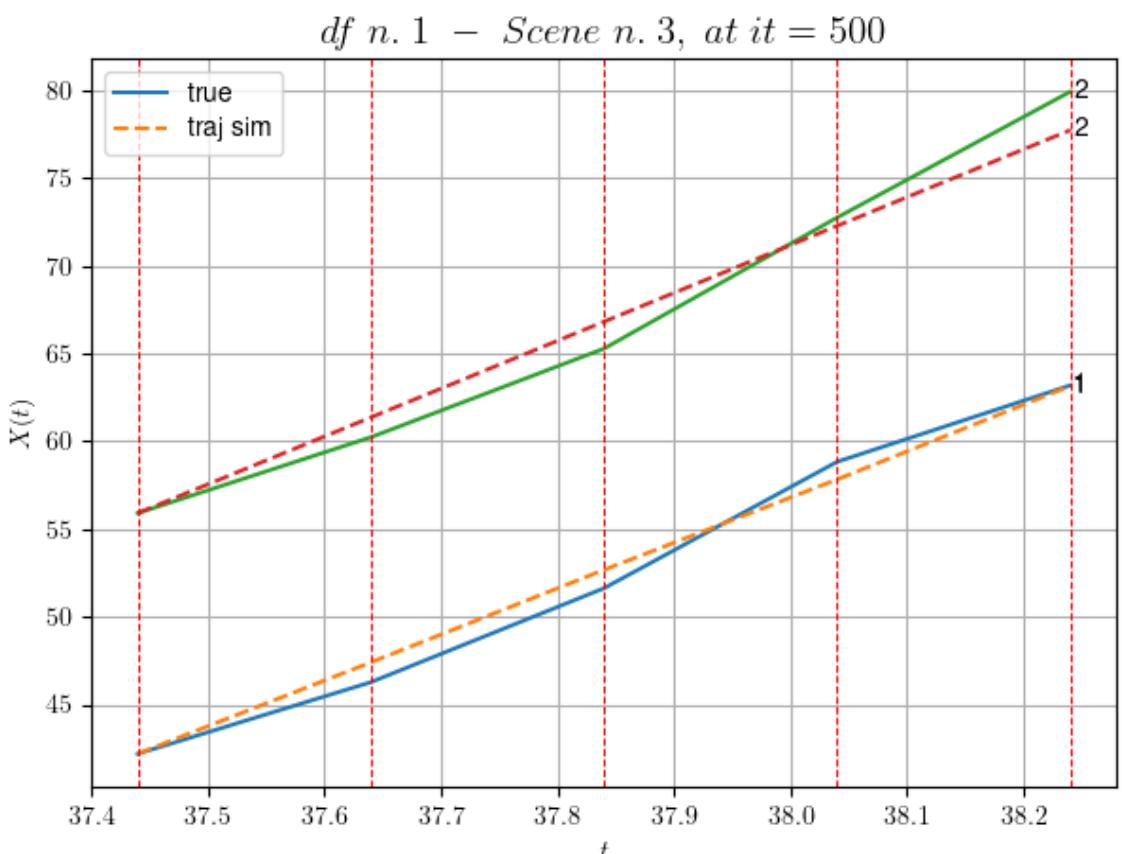
```

```
* v_ann: [26.35424041748047, 27.29525416582103]
```

- Time interval n.2: [37.84, 38.04]
 - * y_true: [36.04216131]
 - * v_ann: [25.78068733215332, 27.29525416582103]

- Time interval n.3: [38.04, 38.24]
 - * y_true: [21.78153493]
 - * v_ann: [26.646595001220703, 27.29525416582103]

- * err= 1.206331247338952
- * Learning rate NN = 2.3914839403005317e-05
- * diff = 2.389637482069773e-05



For scene 3/109

- * use LR_NN=5e-05 with err=1.444100723149023 at it=24
- * v0_scn_mean = 27.403443999167504
- * MAE = 1.095704288947368

df n.1, scene n.4/109

We have 3 time intervals inside [44.24, 44.84]

- Time interval n.0: [44.24, 44.44]

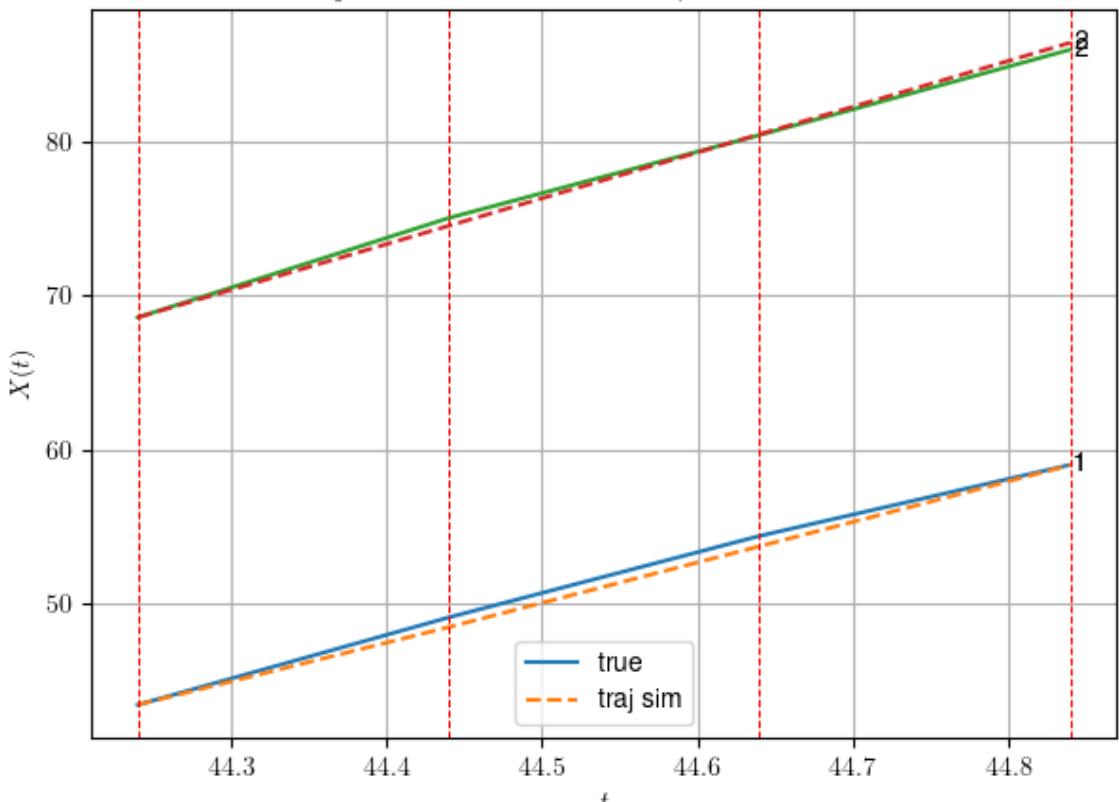
```
* y_true: [28.36118373]
* v_ann: [25.20277976989746, 29.733272374894153]
```

```
- Time interval n.1: [44.44, 44.64]
* y_true: [26.45136946]
* v_ann: [26.246883392333984, 29.733272374894153]
```

```
- Time interval n.2: [44.64, 44.84]
* y_true: [23.12145598]
* v_ann: [26.36095428466797, 29.733272374894153]
```

```
* err= 0.16420148413814278
* Learning rate NN = 2.952449540316593e-05
* diff = 1.0878682565884645e-07
```

df n. 1 – Scene n. 4, at it = 500



For scene 4/109

```
* use LR_NN=5e-05 with err=0.18831065036624406 at it=24
* v0_scn_mean = 29.743941479896307
* MAE = 0.13911624292713806
```

df n.1, scene n.5/109

We have 5 time intervals inside [52.84, 53.84]

- Time interval n.0: [52.84, 53.04]
 * y_true: [24.68117551]
 * v_ann: [29.606643676757812, 35.9128223540259]

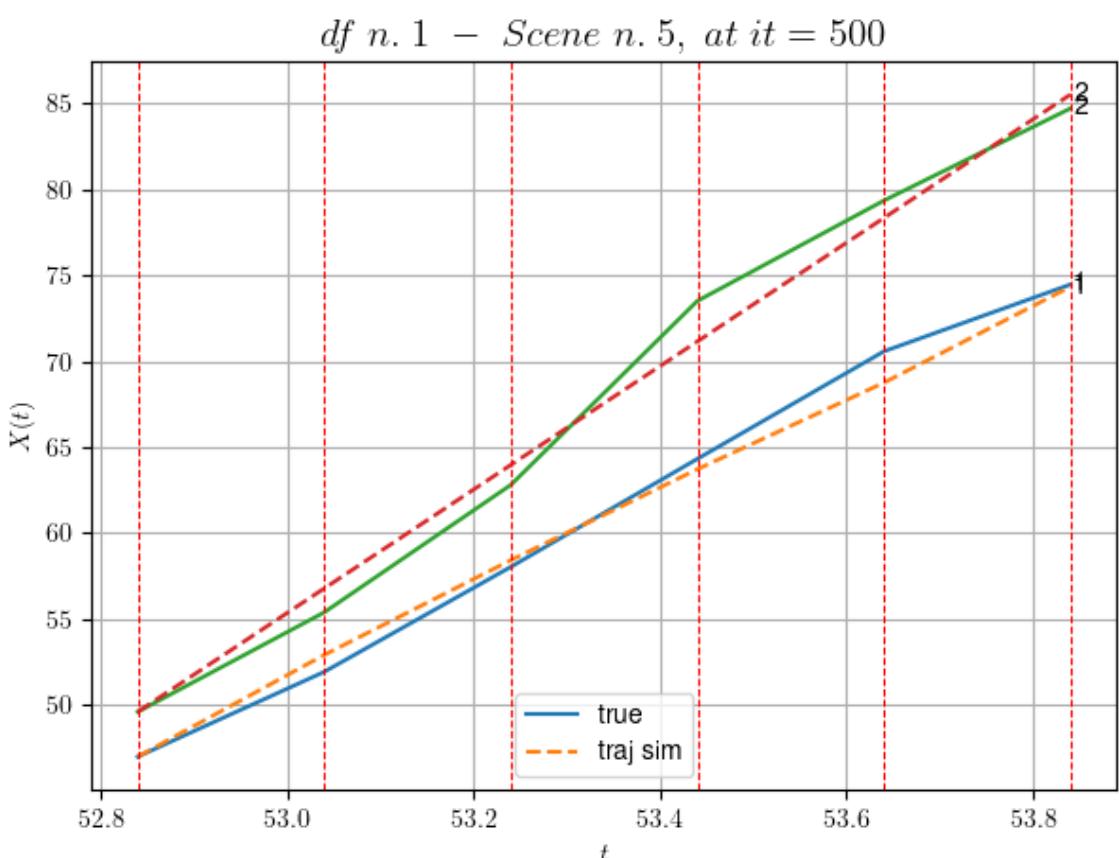
- Time interval n.1: [53.04, 53.24]
 * y_true: [30.52180624]
 * v_ann: [27.549156188964844, 35.9128223540259]

- Time interval n.2: [53.24, 53.44]
 * y_true: [31.41247605]
 * v_ann: [26.45063591003418, 35.9128223540259]

- Time interval n.3: [53.44, 53.64]
 * y_true: [31.2776072]
 * v_ann: [25.176353454589844, 35.9128223540259]

- Time interval n.4: [53.64, 53.84]
 * y_true: [19.45696001]
 * v_ann: [27.911550521850586, 35.9128223540259]

* err= 1.2781676908240271
 * Learning rate NN = 0.0003874204121530056
 * diff = 0.028309814528975075



```
For scene 5/109
* use LR_NN=0.001 with err=18.779906682668017 at it=24
* v0_scn_mean = 35.676309459910044
* MAE = 1.2518923936369708
```

```
df n.1, scene n.6/109
```

```
We have 2 time intervals inside [54.84, 55.24]
```

- Time interval n.0: [54.84, 55.04]
 - * y_true: [39.69303006]
 - * v_ann: [35.94355773925781, 30.333444658289295]

- Time interval n.1: [55.04, 55.24]

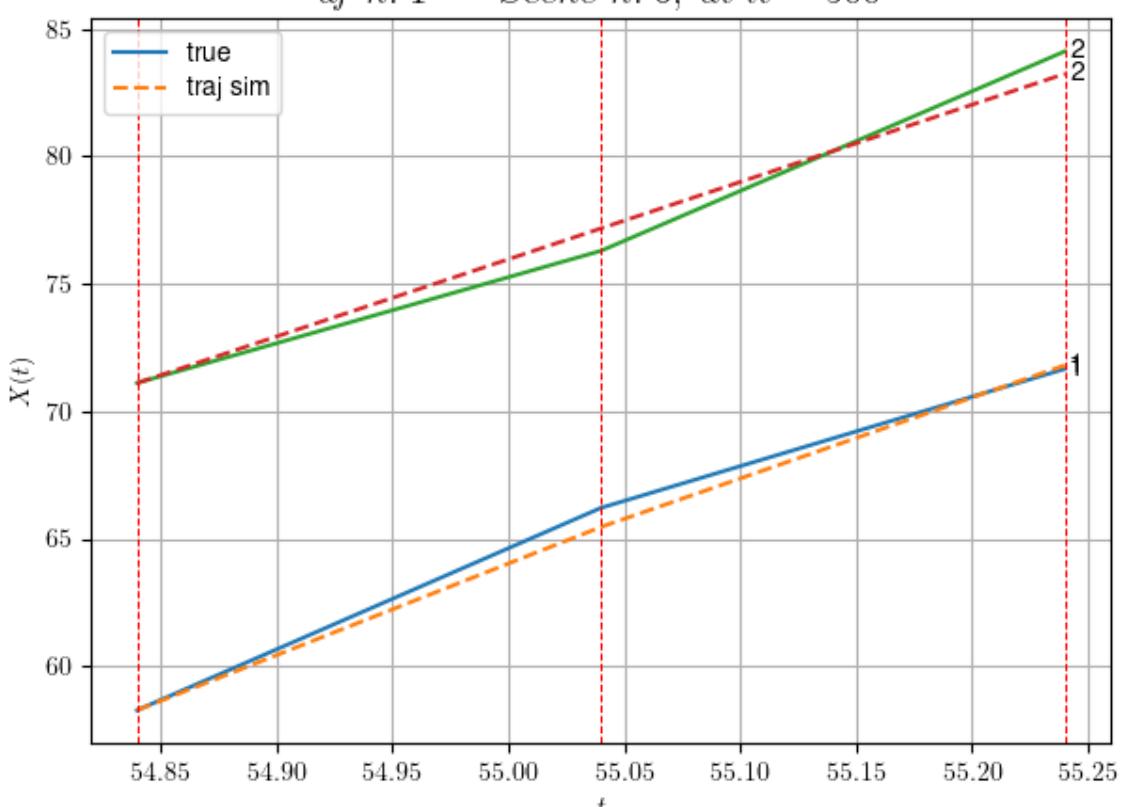
- * y_true: [27.26241914]
 - * v_ann: [31.72719383239746, 30.333444658289295]

- * err= 0.35534853537933014

- * Learning rate NN = 7.289998757187277e-05

- * diff = 0.0014935251618026224

df n. 1 – Scene n. 6, at it = 500



```
For scene 6/109
```

```
* use LR_NN=0.0001 with err=0.3150528512566287 at it=24
* v0_scn_mean = 30.320106871960185
* MAE = 0.35534853537933014
```

```
=====
=====
```

df n.1, scene n.7/109

```
=====
=====
```

We have 4 time intervals inside [56.84,57.64]

- Time interval n.0: [56.84, 57.04]
 - * y_true: [23.35104229]
 - * v_ann: [24.429811477661133, 35.49695649017791]

```
-----
```

- Time interval n.1: [57.04, 57.24]
 - * y_true: [29.99173244]
 - * v_ann: [25.42158317565918, 35.49695649017791]

```
-----
```

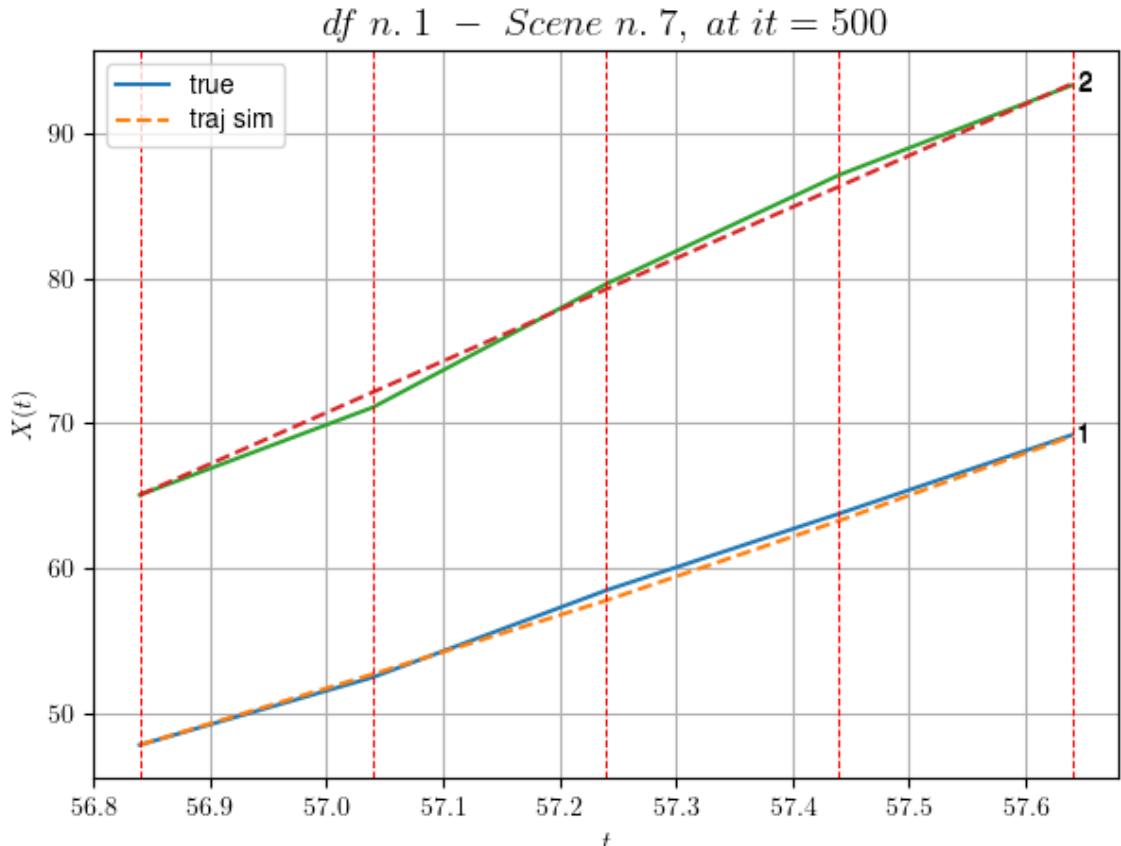
- Time interval n.2: [57.24, 57.44]
 - * y_true: [26.49185212]
 - * v_ann: [27.541587829589844, 35.49695649017791]

```
-----
```

- Time interval n.3: [57.44, 57.64]
 - * y_true: [27.20243748]
 - * v_ann: [29.170936584472656, 35.49695649017791]

```
-----
```

- * err= 0.2652189411851011
- * Learning rate NN = 2.3914839403005317e-05
- * diff = 0.0007172038711486528



For scene 7/109

- * use LR_NN=5e-05 with err=4.461693515963468 at it=24
- * v0_scn_mean = 35.27707823061246
- * MAE = 0.2652189411851011

df n.1, scene n.8/109

We have 4 time intervals inside [60.04, 60.84]

- Time interval n.0: [60.04, 60.24]
 - * y_true: [32.6313833]
 - * v_ann: [33.22309112548828, 26.521619591085987]

- Time interval n.1: [60.24, 60.44]
 - * y_true: [35.39191239]
 - * v_ann: [30.731739044189453, 26.521619591085987]

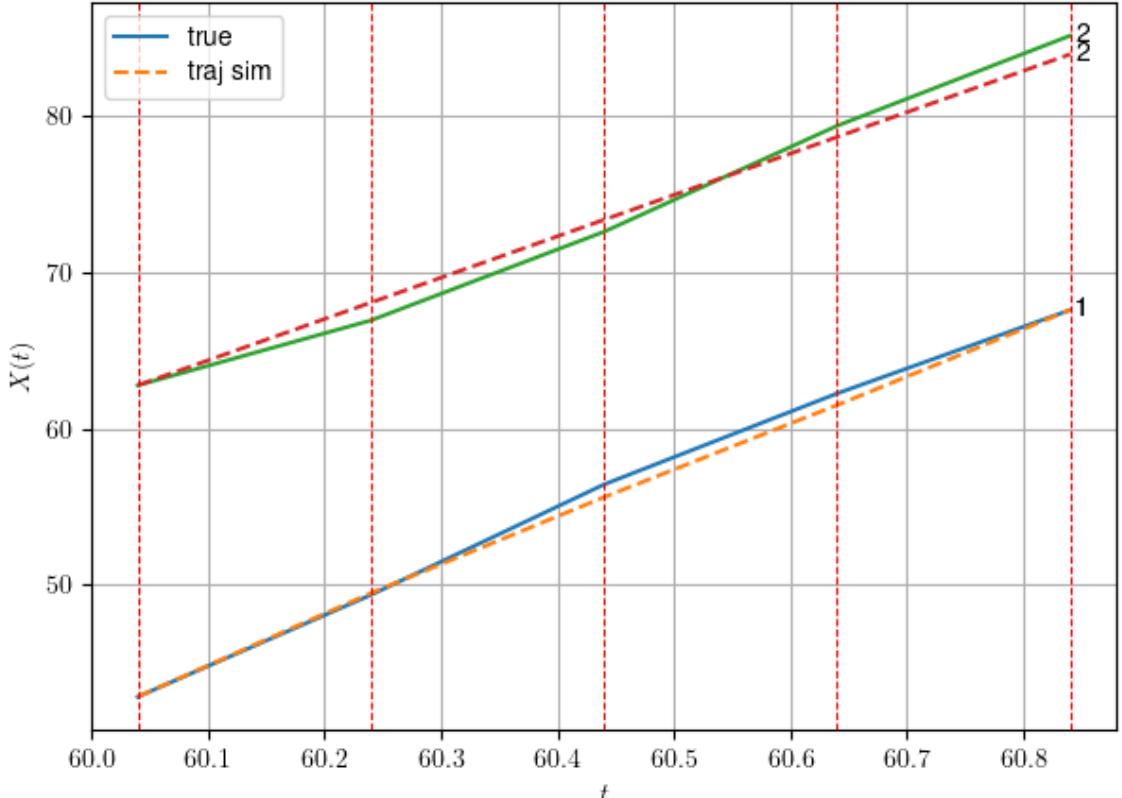
- Time interval n.2: [60.44, 60.64]
 - * y_true: [29.16197739]
 - * v_ann: [29.506696701049805, 26.521619591085987]

- Time interval n.3: [60.64, 60.84]
 - * y_true: [26.75220161]

```
* v_ann: [30.495269775390625, 26.521619591085987]
```

```
* err= 0.5059556456424941
* Learning rate NN = 2.3914839403005317e-05
* diff = 0.00020715960134365385
```

df n. 1 – Scene n. 8, at it = 500



For scene 8/109

```
* use LR_NN=5e-05 with err=1.3545052182776915 at it=24
* v0_scn_mean = 26.660754807415838
* MAE = 0.4573935386720399
```

df n.1, scene n.9/109

We have 5 time intervals inside [80.64, 81.64]

- Time interval n.0: [80.64, 80.84]
 - * y_true: [33.34215633]
 - * v_ann: [32.40233612060547, 29.042810010338858]

- Time interval n.1: [80.84, 81.04]
 - * y_true: [31.76283343]
 - * v_ann: [33.91099548339844, 29.042810010338858]

- Time interval n.2: [81.04, 81.24]

```
* y_true: [32.4827505]
* v_ann: [28.722864151000977, 29.042810010338858]
```

```
- Time interval n.3: [81.24, 81.44]
```

```
* y_true: [21.98271265]
```

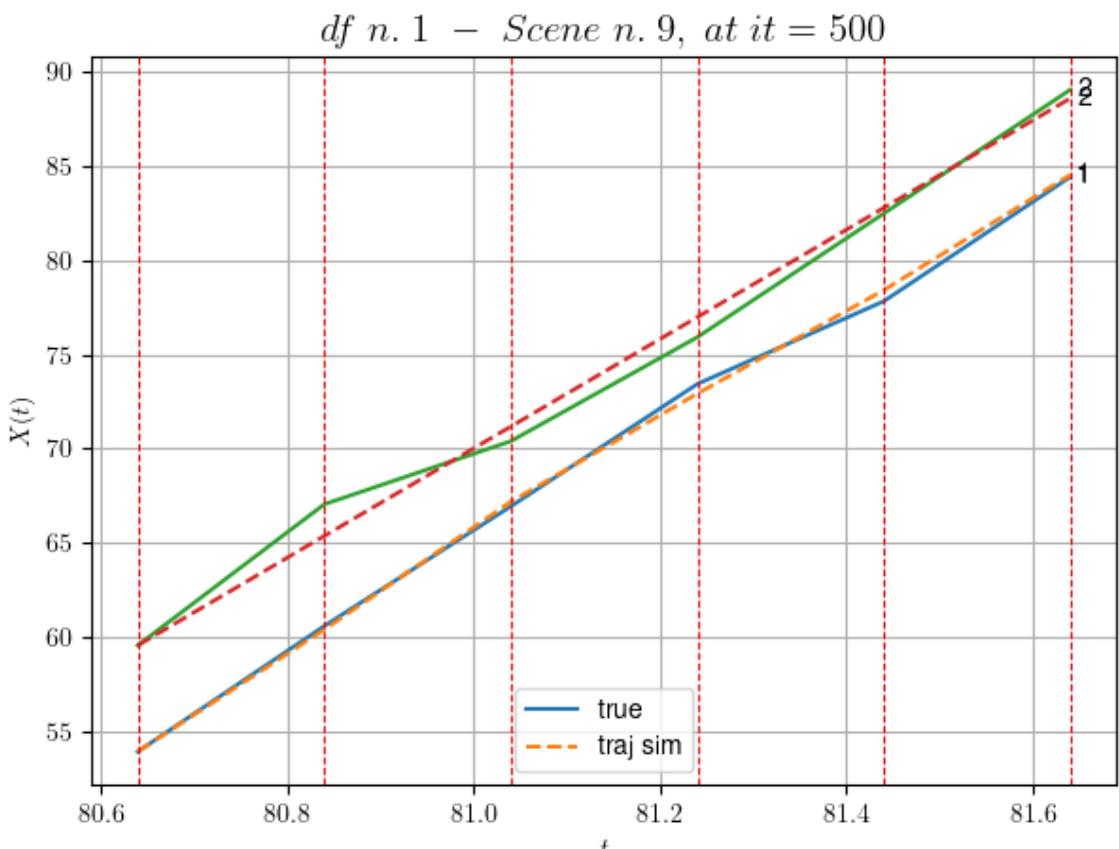
```
* v_ann: [27.4725341796875, 29.042810010338858]
```

```
- Time interval n.4: [81.44, 81.64]
```

```
* y_true: [33.00400249]
```

```
* v_ann: [30.621145248413086, 29.042810010338858]
```

```
* err= 0.4649373309918994
* Learning rate NN = 3.874203684972599e-05
* diff = 0.0015870043245200804
```



For scene 9/109

```
* use LR_NN=0.0001 with err=1.4878240602171882 at it=24
* v0_scn_mean = 29.081097609918157
* MAE = 0.4649373309918994
```

df n.1, scene n.10/109

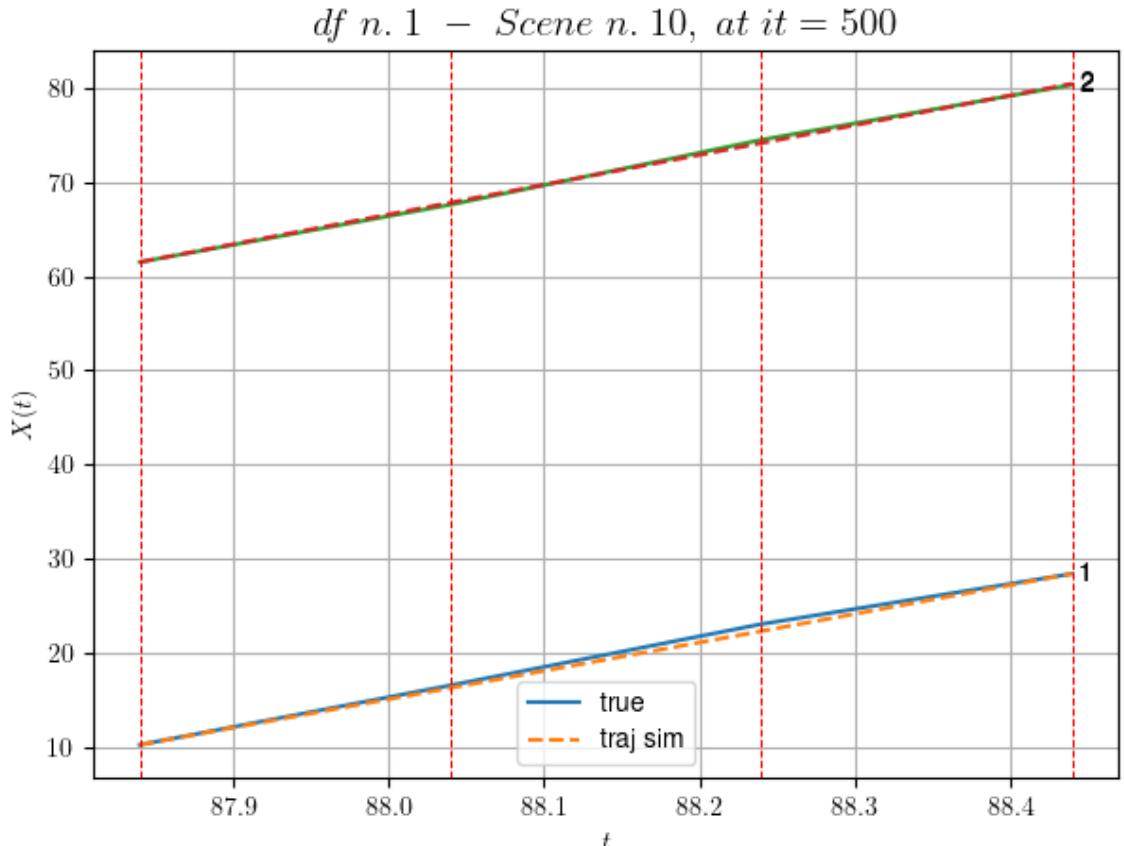
We have 3 time intervals inside [87.84, 88.44]

```
- Time interval n.0: [87.84, 88.04]
* y_true: [31.60011691]
* v_ann: [30.211565017700195, 31.60048761185844]
```

```
- Time interval n.1: [88.04, 88.24]
* y_true: [32.50025586]
* v_ann: [30.163923263549805, 31.60048761185844]
```

```
- Time interval n.2: [88.24, 88.44]
* y_true: [26.76036252]
* v_ann: [30.46027374267578, 31.60048761185844]
```

```
* err= 0.10291260675596003
* Learning rate NN = 5.9048988987342454e-06
* diff = 3.7590988357094623e-06
```



For scene 10/109

```
* use LR_NN=1e-05 with err=0.2891408366932299 at it=24
* v0_scn_mean = 31.53646810739644
* MAE = 0.10253135423690325
```

df n.1, scene n.11/109

We have 5 time intervals inside [89.04, 90.04]

- Time interval n.0: [89.04, 89.24]
 - * y_true: [23.80112307]
 - * v_ann: [24.617172241210938, 33.1264525586585]
-

- Time interval n.1: [89.24, 89.44]

- * y_true: [30.25175591]
 - * v_ann: [26.6685733795166, 33.1264525586585]
-

- Time interval n.2: [89.44, 89.64]

- * y_true: [26.85189703]
 - * v_ann: [27.40807342529297, 33.1264525586585]
-

- Time interval n.3: [89.64, 89.84]

- * y_true: [36.00310026]
 - * v_ann: [29.546186447143555, 33.1264525586585]
-

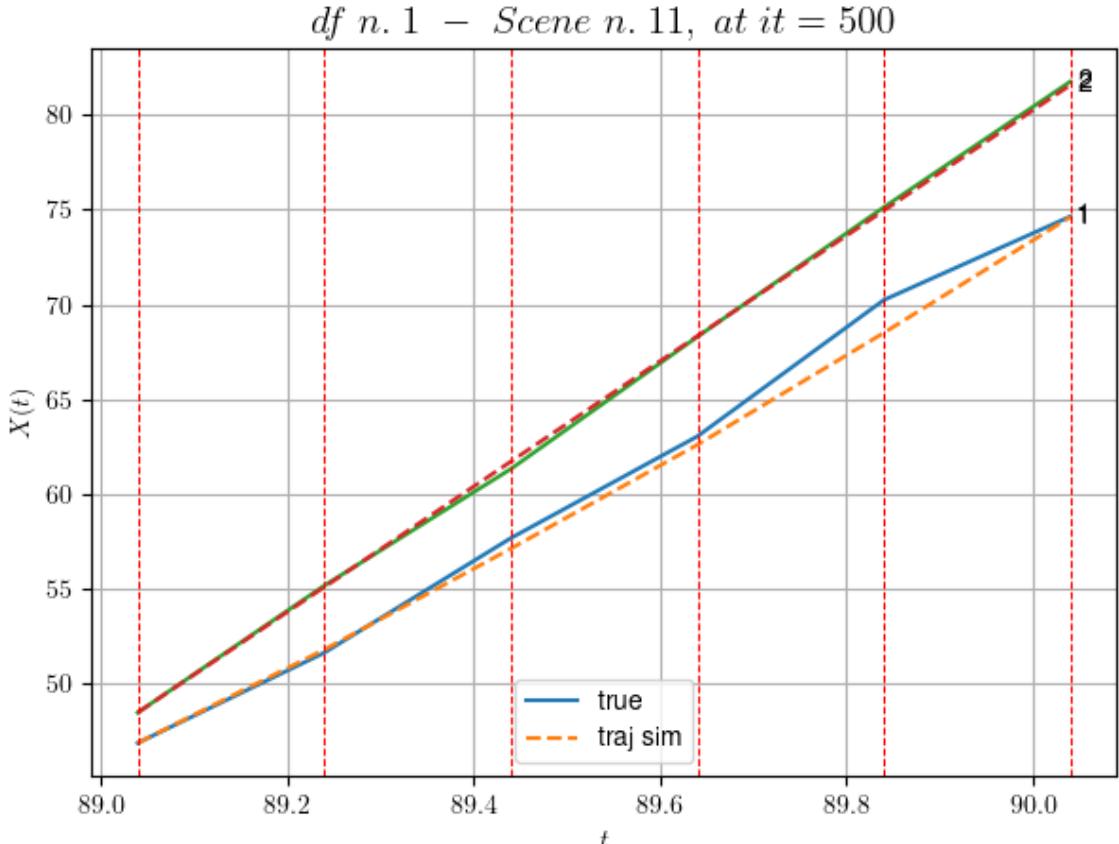
- Time interval n.4: [89.84, 90.04]

- * y_true: [22.05223989]
 - * v_ann: [30.575159072875977, 33.1264525586585]
-

* err= 0.31327112415390024

* Learning rate NN = 0.0003874204121530056

* diff = 0.010715285765706795



For scene 11/109

- * use LR_NN=0.001 with err=7.36573214928289 at it=24
- * v0_scn_mean = 33.00139445633615
- * MAE = 0.2839421630650578

df n.1, scene n.12/109

We have 3 time intervals inside [90.84, 91.44]

- Time interval n.0: [90.84, 91.04]
 - * y_true: [30.30091015]
 - * v_ann: [36.868804931640625, 39.261699277146995]

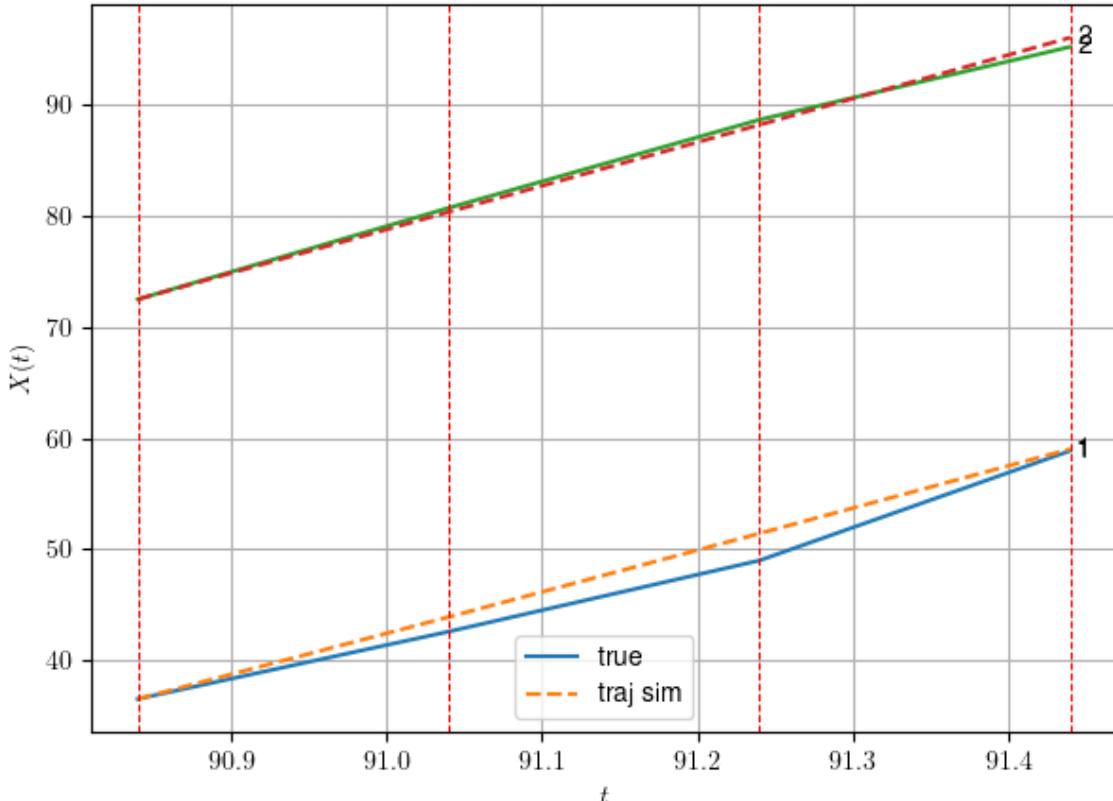
- Time interval n.1: [91.04, 91.24]
 - * y_true: [32.01131791]
 - * v_ann: [37.59492111206055, 39.261699277146995]

- Time interval n.2: [91.24, 91.44]
 - * y_true: [49.37285732]
 - * v_ann: [38.0030403137207, 39.261699277146995]

- * err= 1.08792458617008
- * Learning rate NN = 5.9048988987342454e-06

* diff = 0.0010541945616988624

df n. 1 – Scene n. 12, at it = 500



For scene 12/109

* use LR_NN=1e-05 with err=6.050272540231642 at it=24
 * v0_scn_mean = 38.89123130613217
 * MAE = 1.086677252488322

df n.1, scene n.13/109

We have 3 time intervals inside [109.24, 109.84]

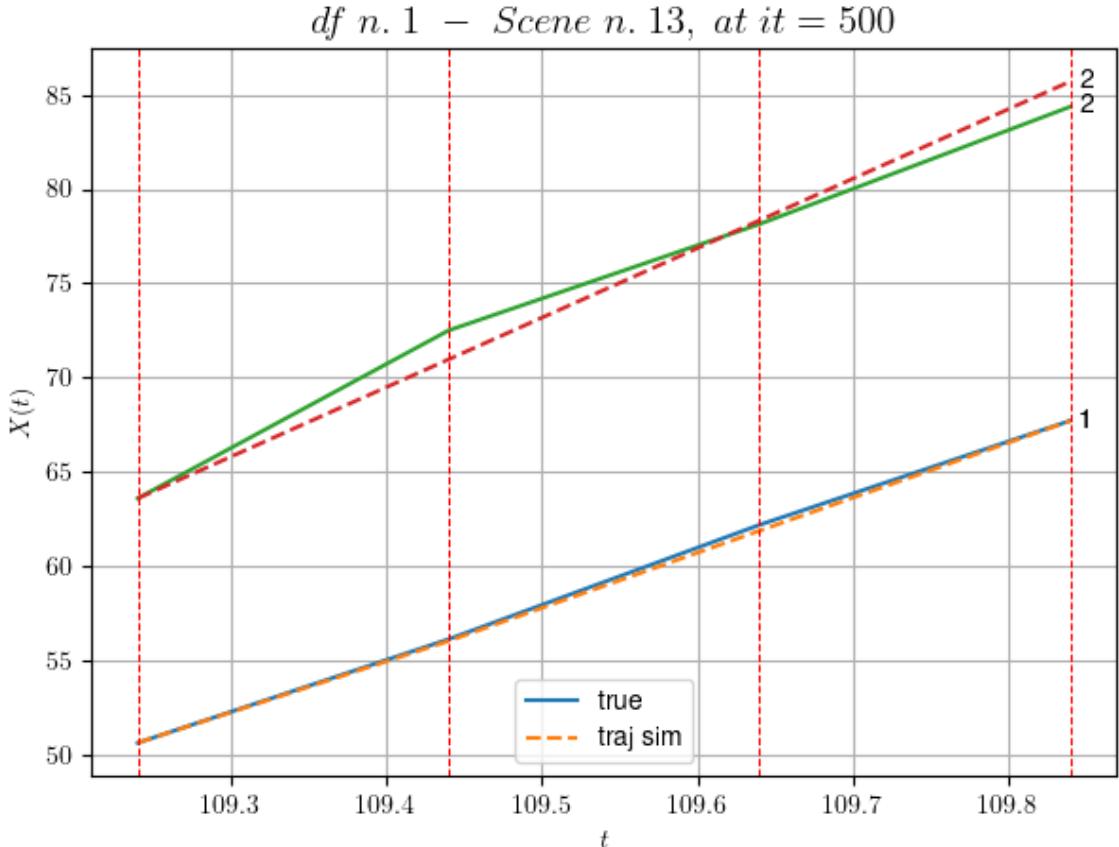
- Time interval n.0: [109.24, 109.44]
 - * y_true: [27.49662615]
 - * v_ann: [27.01106071472168, 36.87036026795242]

- Time interval n.1: [109.44, 109.64]
 - * y_true: [30.32701959]
 - * v_ann: [29.266063690185547, 36.87036026795242]

- Time interval n.2: [109.64, 109.84]
 - * y_true: [27.65727146]
 - * v_ann: [29.145902633666992, 36.87036026795242]

* err= 0.5376341551171101

* Learning rate NN = 5.904899080633186e-05
 * diff = 4.672266219152288e-05



For scene 13/109

* use LR_NN=0.0001 with err=2.956457963738767 at it=24
 * v0_scn_mean = 36.59554585728713
 * MAE = 0.4663672501158179

df n.1, scene n.14/109

We have 5 time intervals inside [116.04, 117.04]

- Time interval n.0: [116.04, 116.24]
 - * y_true: [26.72014114]
 - * v_ann: [32.626197814941406, 35.754459494761406]

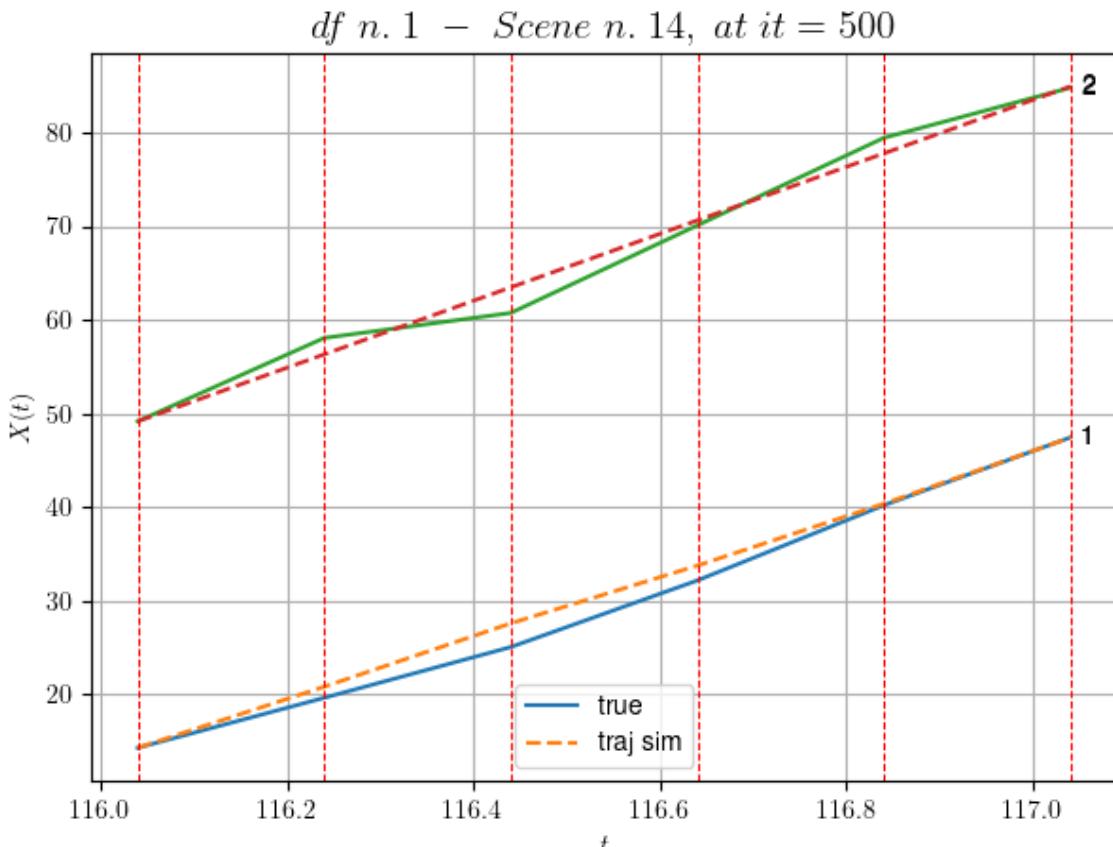
- Time interval n.1: [116.24, 116.44]
 - * y_true: [27.07912387]
 - * v_ann: [33.835052490234375, 35.754459494761406]

- Time interval n.2: [116.44, 116.64]
 - * y_true: [35.55057522]
 - * v_ann: [30.81020736694336, 35.754459494761406]

```
- Time interval n.3: [116.64, 116.84]
* y_true: [40.15103224]
* v_ann: [33.02670669555664, 35.754459494761406]
```

```
-----  
- Time interval n.4: [116.84, 117.04]
* y_true: [36.20135733]
* v_ann: [35.31044387817383, 35.754459494761406]
```

```
-----  
* err= 1.9936262741814637
* Learning rate NN = 3.874203684972599e-05
* diff = 0.0046498167778306065
```



For scene 14/109

```
* use LR_NN=0.0001 with err=8.028696223098176 at it=24
* v0_scn_mean = 35.52428111501502
* MAE = 1.8026387873131264
```

df n.1, scene n.15/109

We have 3 time intervals inside [120.84,121.44]

```
- Time interval n.0: [120.84, 121.04]
* y_true: [31.55149536]
* v_ann: [29.47801399230957, 32.6264233728826]
```

```

-----  

    - Time interval n.1: [121.04, 121.24]  

      * y_true: [29.5468664]  

      * v_ann: [29.50040626525879, 32.6264233728826]
-----
```

```

-----  

    - Time interval n.2: [121.24, 121.44]  

      * y_true: [28.27701719]  

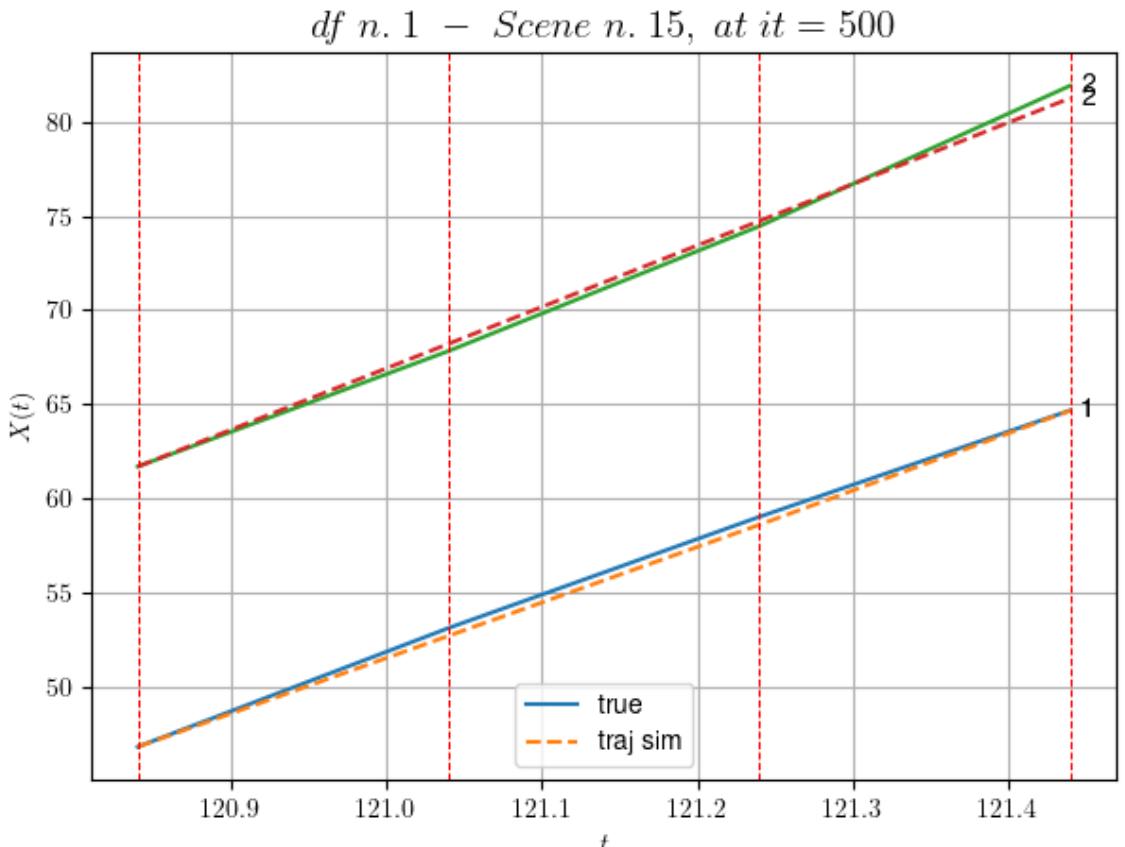
      * v_ann: [30.33061408996582, 32.6264233728826]
-----
```

```

* err= 0.1274003267440837  

* Learning rate NN = 5.904899080633186e-05  

* diff = 2.046003286149123e-05
```



For scene 15/109

```

* use LR_NN=0.0001 with err=0.765776401569086 at it=24  

* v0_scn_mean = 32.521366437987375  

* MAE = 0.12702006636438581
=====
```

df n.1, scene n.16/109

```

=====
=====
```

We have 4 time intervals inside [130.64,131.44]

```

    - Time interval n.0: [130.64, 130.84]  

      * y_true: [25.75092635]  

      * v_ann: [26.015378952026367, 33.61924590429416]
=====
```

```

-----  

- Time interval n.1: [130.84, 131.04]  

* y_true: [30.67141813]  

* v_ann: [28.202274322509766, 33.61924590429416]
-----
```

```

-----  

- Time interval n.2: [131.04, 131.24]  

* y_true: [29.07678141]  

* v_ann: [29.324066162109375, 33.61924590429416]
-----
```

```

-----  

- Time interval n.3: [131.24, 131.44]  

* y_true: [25.82680503]  

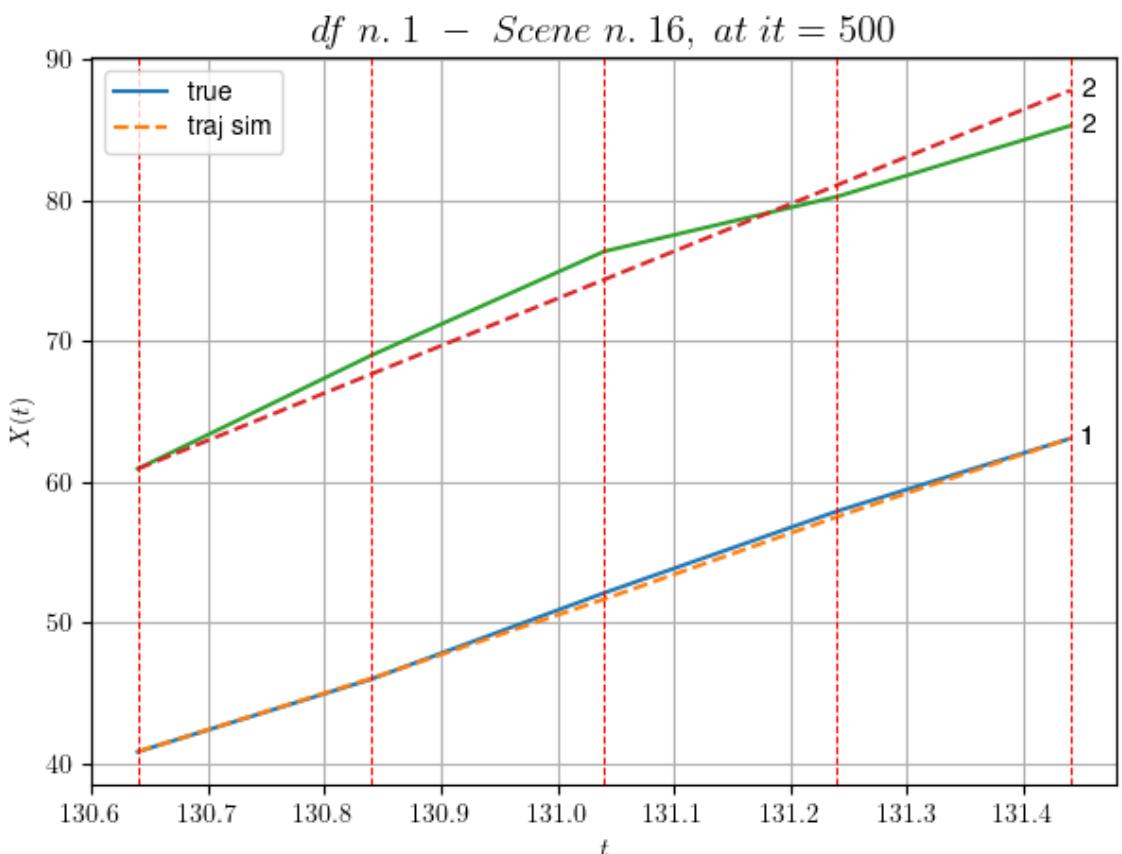
* v_ann: [27.842063903808594, 33.61924590429416]
-----
```

```

* err= 1.3088718634142993  

* Learning rate NN = 2.3914839403005317e-05  

* dfff = 2.22711074682021e-05
-----
```



For scene 16/109

```

* use LR_NN=5e-05 with err=1.8721323342626364 at it=24
* v0_scn_mean = 33.47447606815025
* MAE = 1.1417330359058424
=====
```

```
df n.1, scene n.17/109
```

We have 3 time intervals inside [140.64, 141.24]

- Time interval n.0: [140.64, 140.84]

- * y_true: [23.34058075]

- * v_ann: [27.861486434936523, 34.92834910020575]

- Time interval n.1: [140.84, 141.04]

- * y_true: [28.71099355]

- * v_ann: [25.1021785736084, 34.92834910020575]

- Time interval n.2: [141.04, 141.24]

- * y_true: [30.37630847]

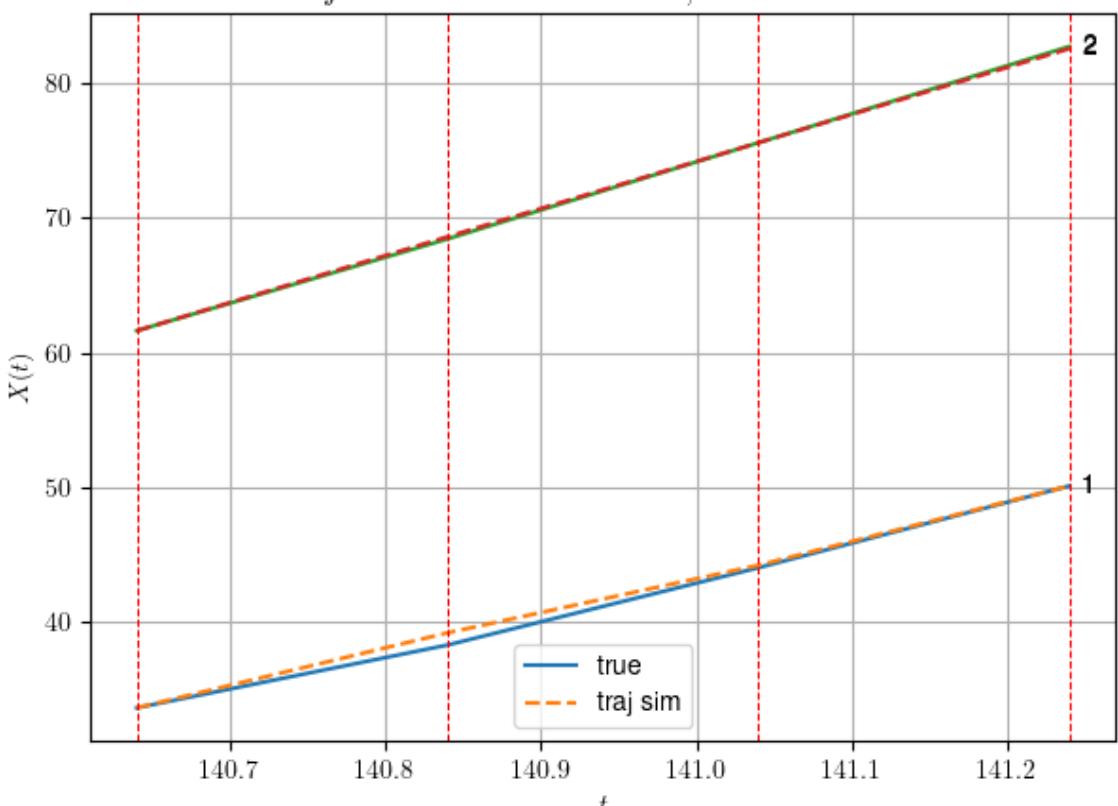
- * v_ann: [29.490821838378906, 34.92834910020575]

- * err= 0.11317185995898942

- * Learning rate NN = 0.0002952449722215533

- * diff = 0.0011020227907652205

df n. 1 – Scene n. 17, at it = 500



For scene 17/109

- * use LR_NN=0.0005 with err=1.833734353017791 at it=24

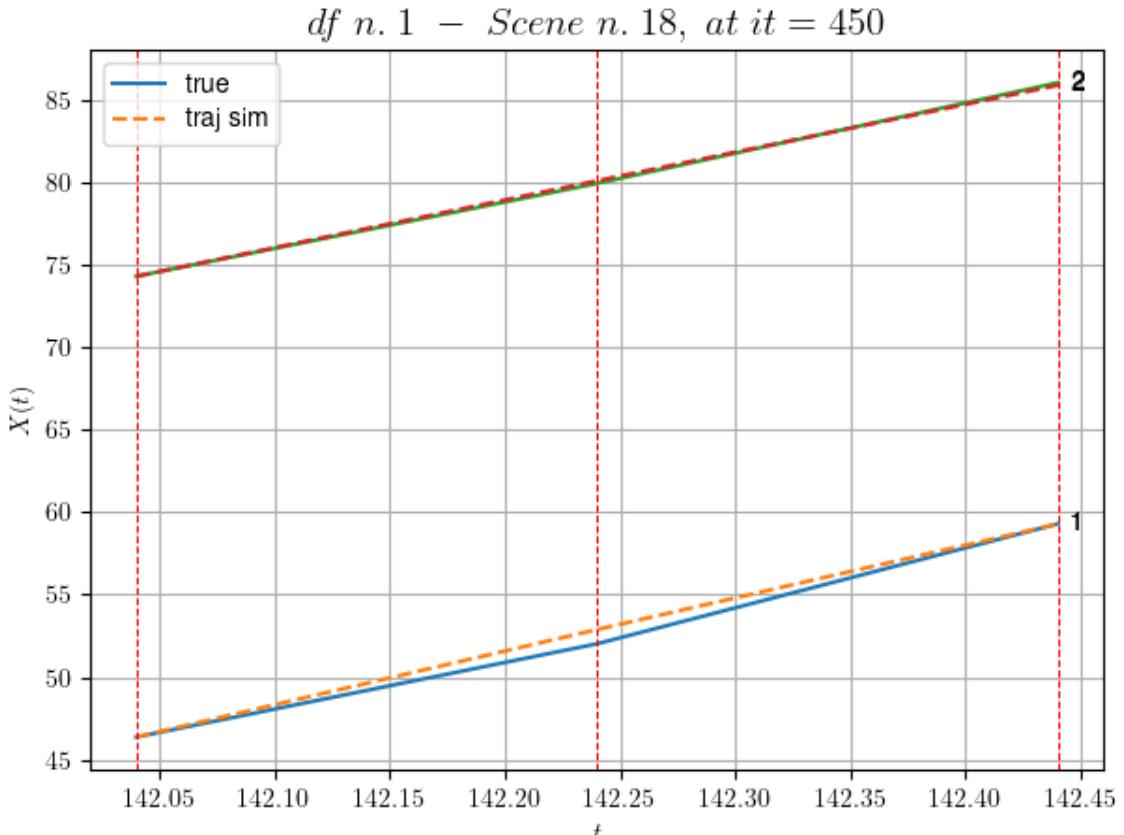
- * v0_scn_mean = 34.731215136235406

- * MAE = 0.07979263593302054

```
df n.1, scene n.18/109
```

```
=====
=====
```

We have 2 time intervals inside [142.04,142.44]
* err= 0.1327484642992098
* Learning rate NN = 3.6449993785936385e-05
* diff = 7 005762826806005e-07



For scene 18/109

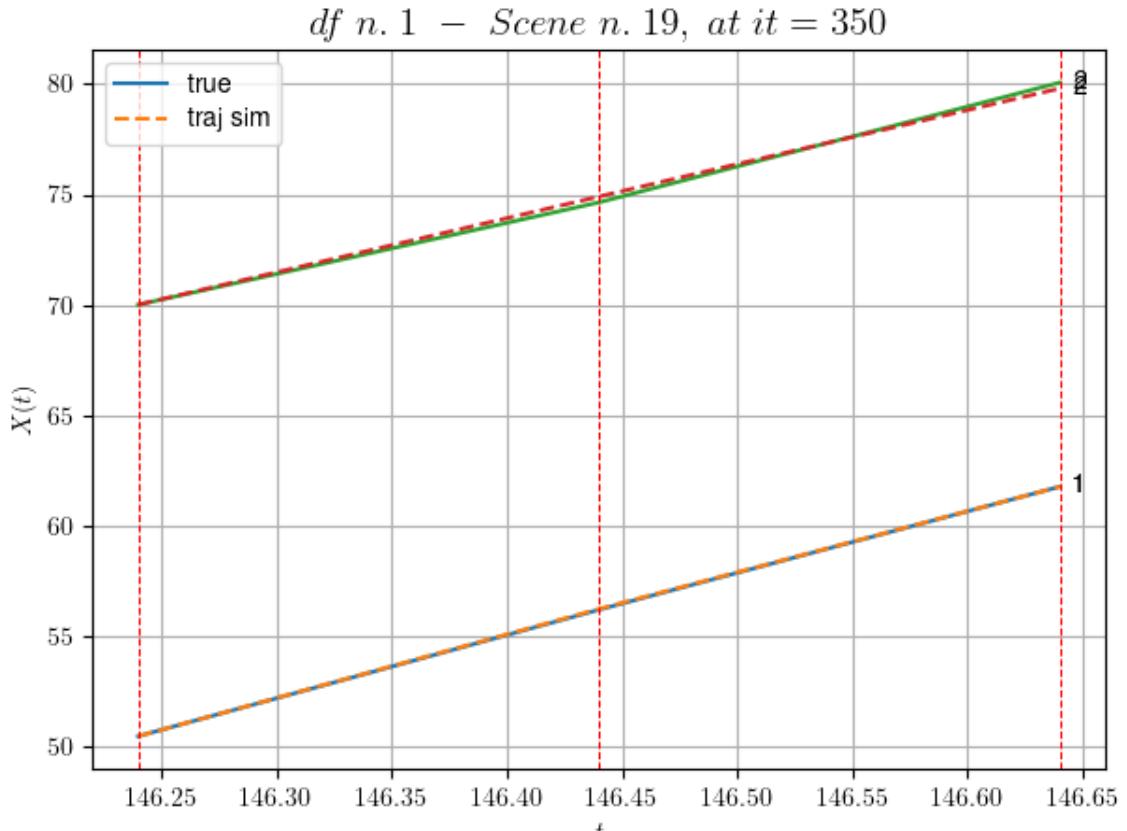
* use LR_NN=5e-05 with err=0.17435073369405582 at it=24
* v0_scn_mean = 29.00955250343826
* MAE = 0.12453853535356875

```
=====
=====
```

```
df n.1, scene n.19/109
```

```
=====
=====
```

We have 2 time intervals inside [146.24,146.64]
* err= 0.02357910393089446
* Learning rate NN = 8.099999104160815e-05
* diff = 3.2155226607072374e-07

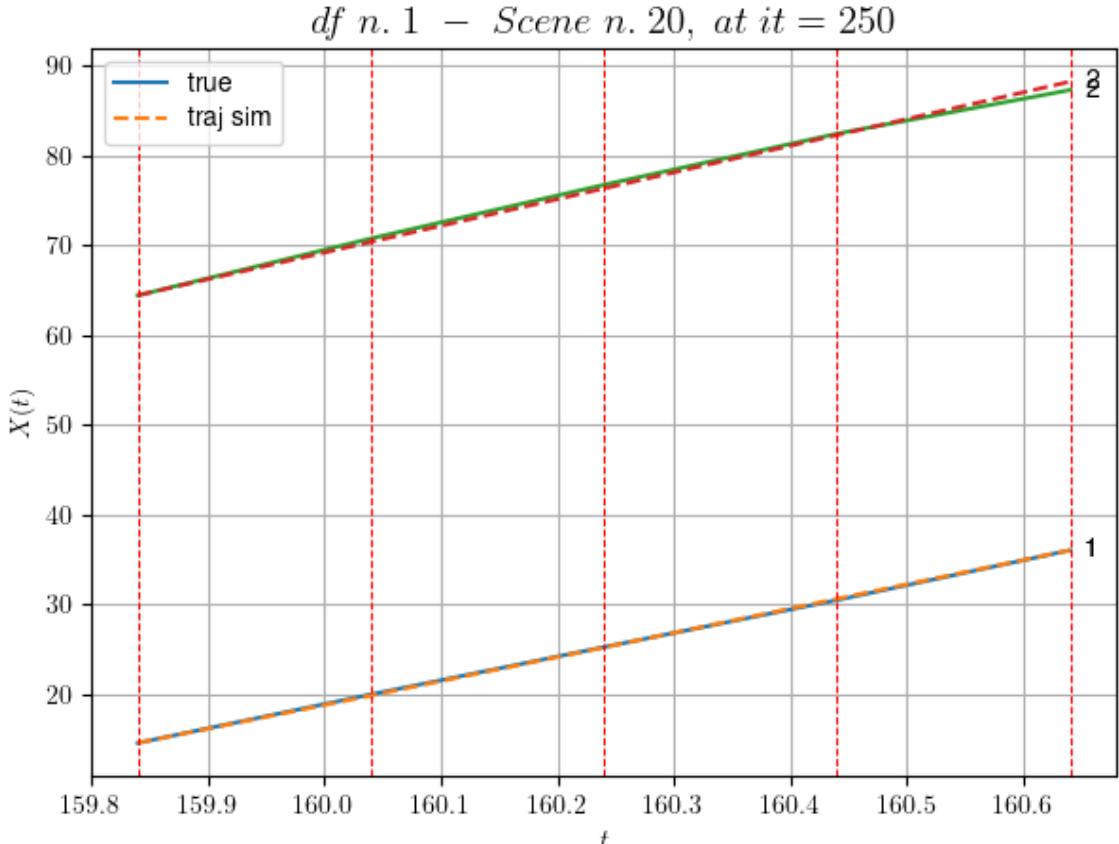


For scene 19/109

```
* use LR_NN=0.0001 with err=0.9426338560153996 at it=24
* v0_scn_mean = 24.796402820684452
* MAE = 0.021256691714299034
```

df n.1, scene n.20/109

```
We have 4 time intervals inside [159.84,160.64]
* err= 0.12513516643990466
* Learning rate NN = 3.6449993785936385e-05
* diff = 6.958866263229169e-07
```



For scene 20/109

- * use LR_NN=5e-05 with err=0.14788756152780402 at it=24
- * v0_scn_mean = 29.815140139063505
- * MAE = 0.12513516643990466

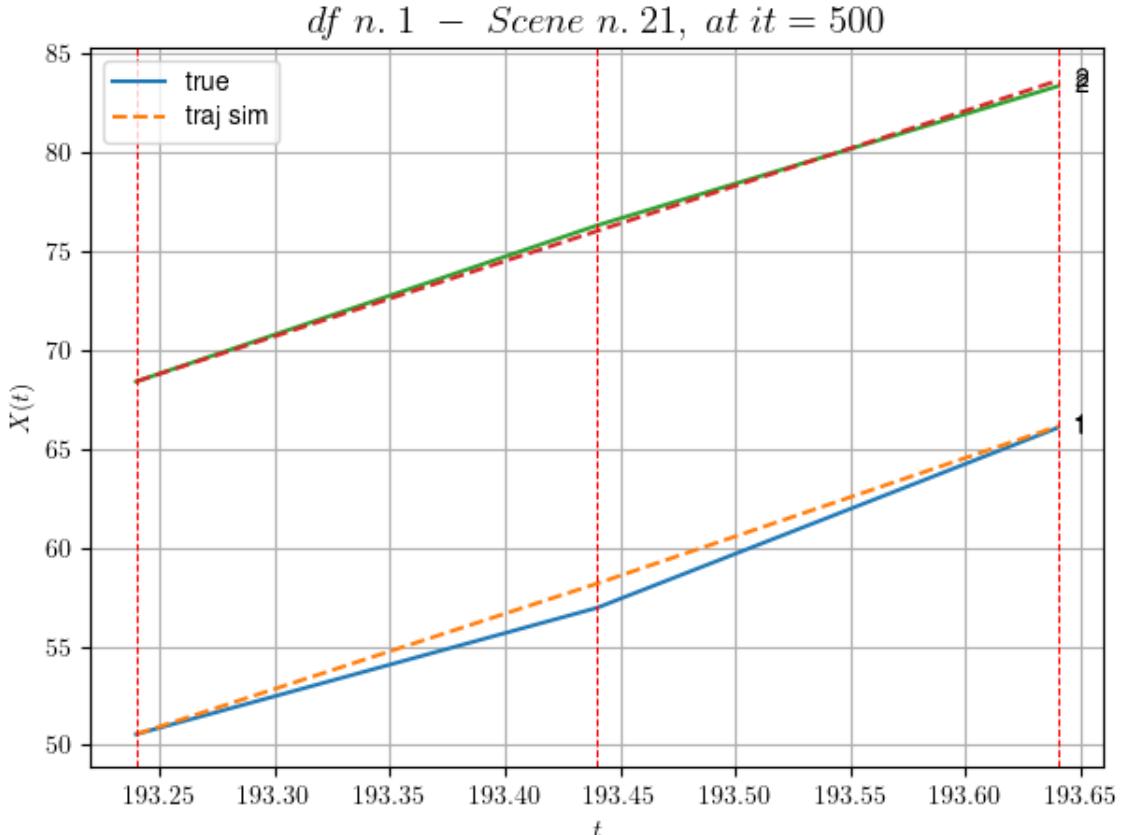
df n.1, scene n.21/109

We have 2 time intervals inside [193.24, 193.64]

- Time interval n.0: [193.24, 193.44]
 - * y_true: [31.99185522]
 - * v_ann: [38.13299560546875, 38.08399937691455]

- Time interval n.1: [193.44, 193.64]
 - * y_true: [45.57332335]
 - * v_ann: [39.78371810913086, 38.08399937691455]

- * err= 0.2791305403684146
- * Learning rate NN = 3.6449993785936385e-05
- * diff = 0.0002359554394404384



For scene 21/109

- * use LR_NN=5e-05 with err=2.2755003730499355 at it=24
- * v0_scn_mean = 37.76063940189928
- * MAE = 0.2767078376400976

df n.1, scene n.22/109

We have 3 time intervals inside [194.84, 195.44]

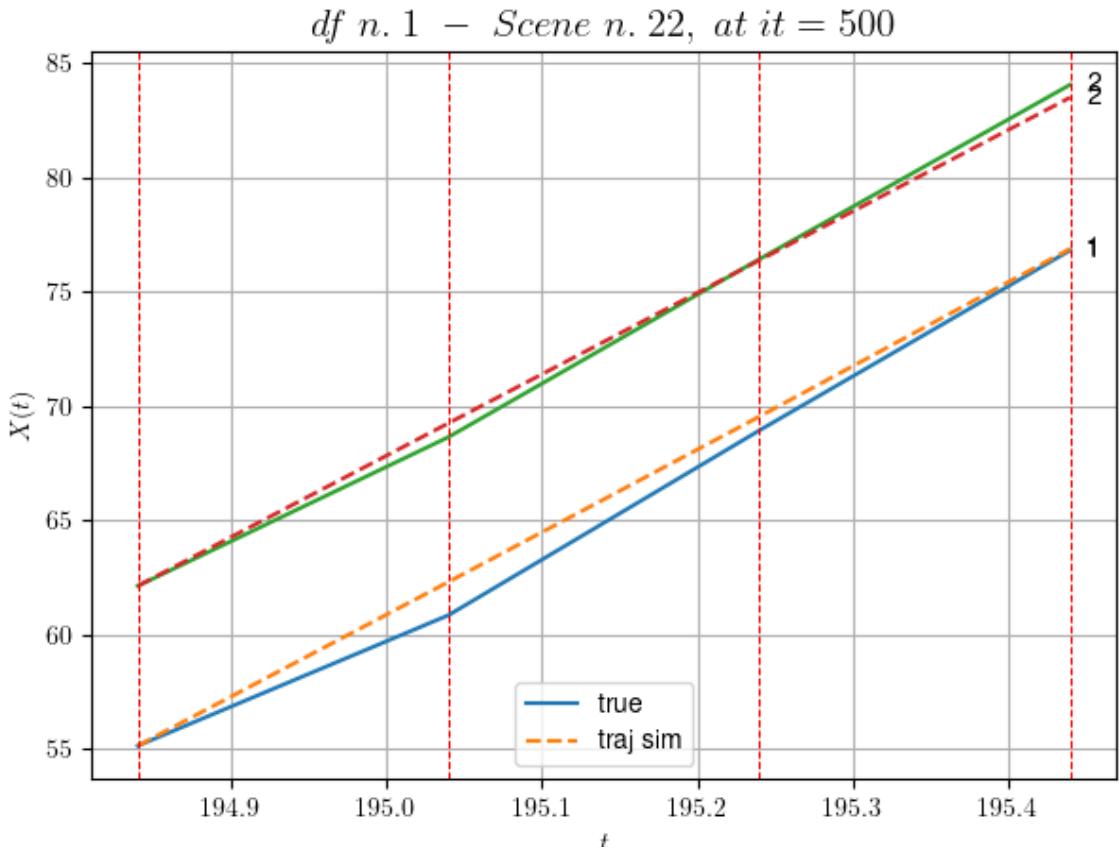
- Time interval n.0: [194.84, 195.04]
 - * y_true: [28.55698867]
 - * v_ann: [35.82892990112305, 35.592723260001094]

- Time interval n.1: [195.04, 195.24]
 - * y_true: [40.37855819]
 - * v_ann: [36.129638671875, 35.592723260001094]

- Time interval n.2: [195.24, 195.44]
 - * y_true: [39.37369802]
 - * v_ann: [36.700897216796875, 35.592723260001094]

- * err= 0.39622518270293683
- * Learning rate NN = 0.0002952449722215533

* diff = 0.0022894902007754014



For scene 22/109

* use LR_NN=0.0005 with err=2.9046633650249483 at it=24
 * v0_scn_mean = 35.369014329643576
 * MAE = 0.3897021220506539

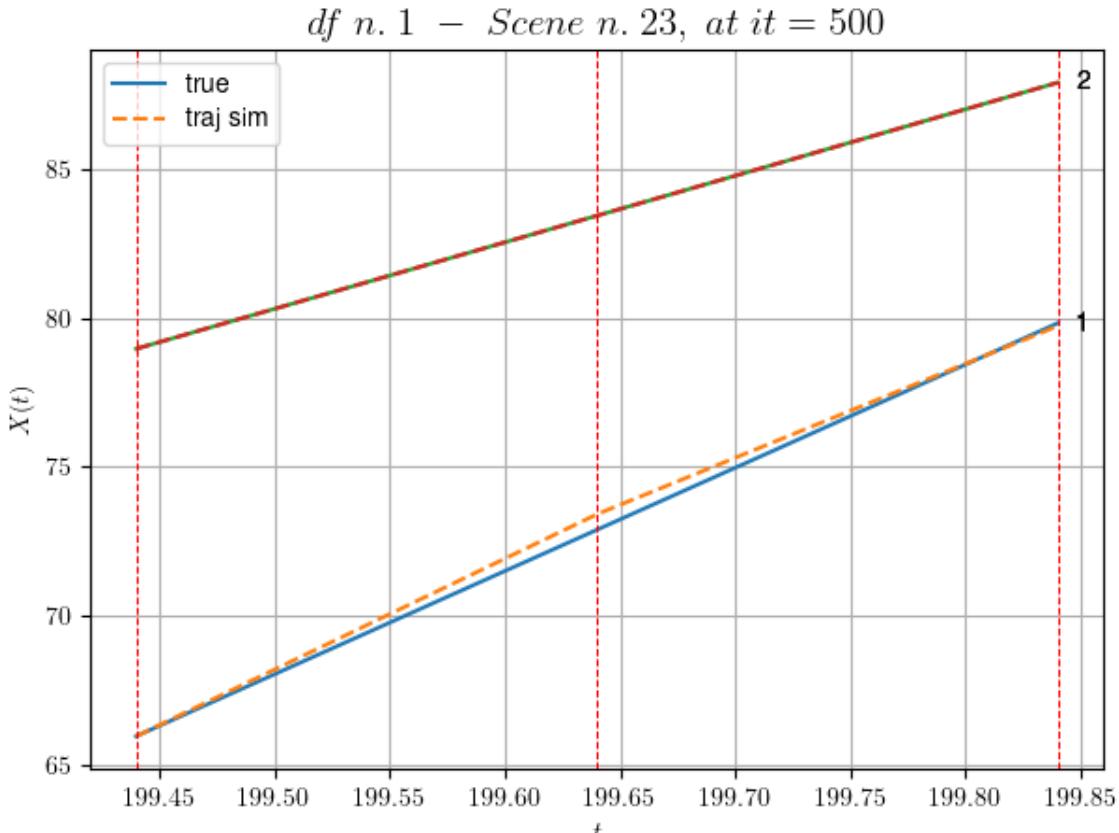
df n.1, scene n.23/109

We have 2 time intervals inside [199.44, 199.84]

- Time interval n.0: [199.44, 199.64]
 - * y_true: [34.74310553]
 - * v_ann: [37.347984313964844, 22.403012729860688]

- Time interval n.1: [199.64, 199.84]
 - * y_true: [34.7739018]
 - * v_ann: [31.67865562438965, 22.403012729860688]

- * err= 0.046839024496012675
- * Learning rate NN = 7.289998757187277e-05
- * diff = 0.0009417703059424534



For scene 23/109

- * use LR_NN=0.0001 with err=2.1405288574739627 at it=24
- * v0_scn_mean = 22.706892220608232
- * MAE = 0.046839024496012675

df n.1, scene n.24/109

We have 4 time intervals inside [200.44, 201.24]

- Time interval n.0: [200.44, 200.64]
 - * y_true: [32.7110423]
 - * v_ann: [33.35578536987305, 30.71027389121868]

- Time interval n.1: [200.64, 200.84]
 - * y_true: [31.56133984]
 - * v_ann: [32.1386604309082, 30.71027389121868]

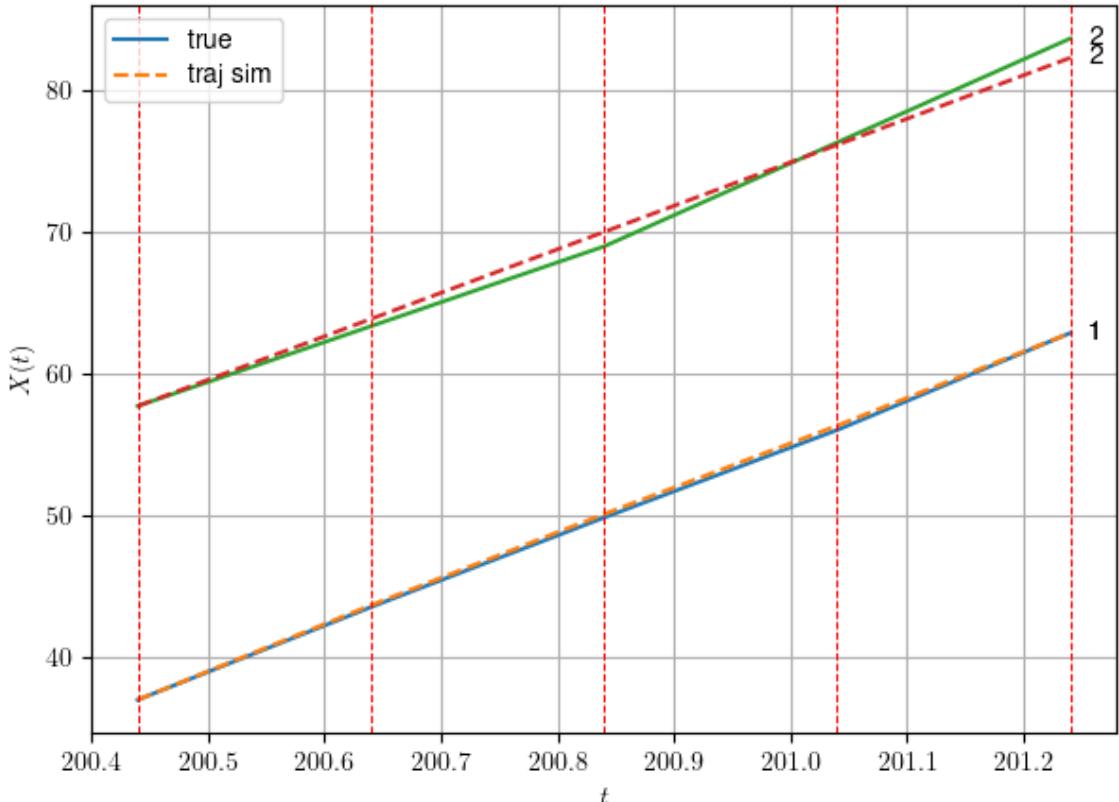
- Time interval n.2: [200.84, 201.04]
 - * y_true: [30.91169527]
 - * v_ann: [31.226057052612305, 30.71027389121868]

- Time interval n.3: [201.04, 201.24]
 - * y_true: [34.21237513]

```
* v_ann: [32.68931198120117, 30.71027389121868]
```

```
* err= 0.33699828405531396
* Learning rate NN = 2.3914839403005317e-05
* diff = 3.4845706186614755e-06
```

df n. 1 – Scene n. 24, at it = 500



For scene 24/109

```
* use LR_NN=5e-05 with err=0.49796672337861914 at it=24
* v0 scn mean = 30.681862935575126
* MAE = 0.336986329519343
```

df n.1, scene n.25/109

We have 3 time intervals inside [209.64, 210.24]

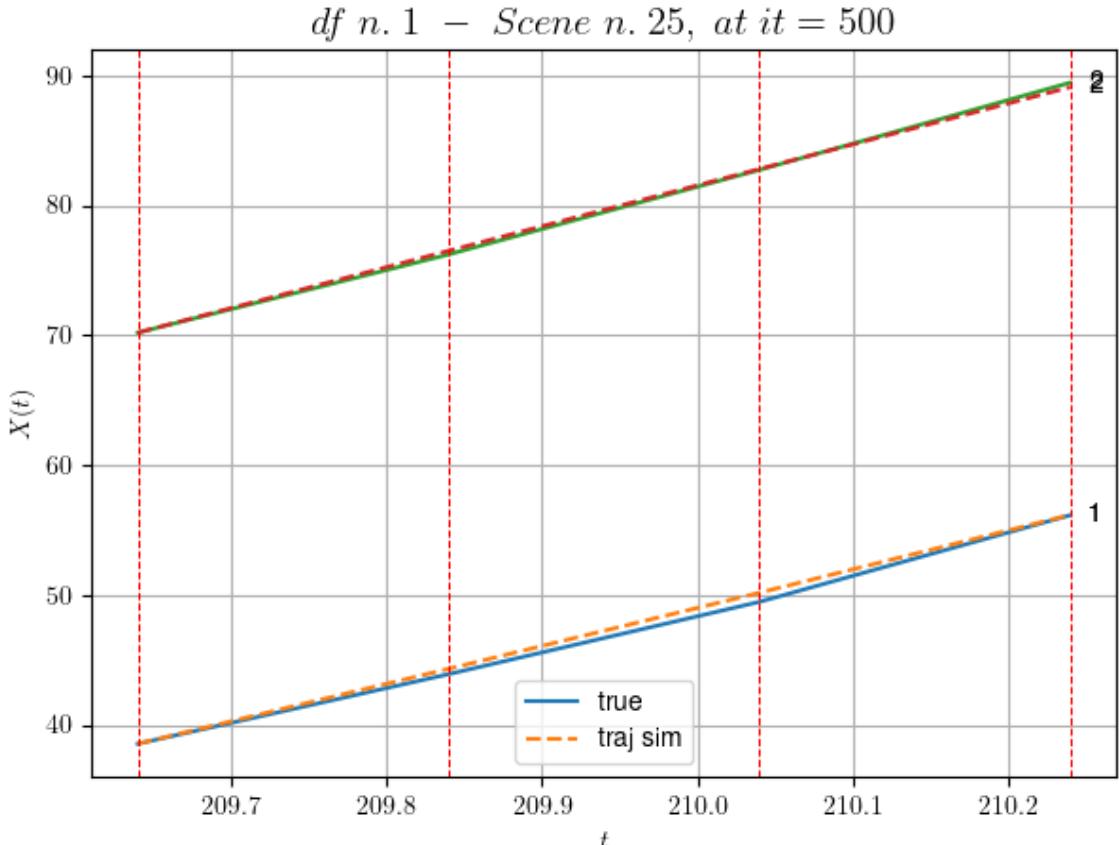
- Time interval n.0: [209.64, 209.84]
 - * y_true: [26.81089057]
 - * v_ann: [28.852458953857422, 31.507071372239462]

- Time interval n.1: [209.84, 210.04]
 - * y_true: [27.83624351]
 - * v_ann: [29.306194305419922, 31.507071372239462]

- Time interval n.2: [210.04, 210.24]

```
* y_true: [33.3769543]
* v_ann: [29.987794876098633, 31.507071372239462]
```

```
* err= 0.10835125051423825
* Learning rate NN = 5.9048988987342454e-06
* diff = 1.735590170318102e-06
```



For scene 25/109

```
* use LR_NN=1e-05 with err=0.28270481856821916 at it=24
* v0_scn_mean = 31.446788517361316
* MAE = 0.10819705366914517
```

df n.1, scene n.26/109

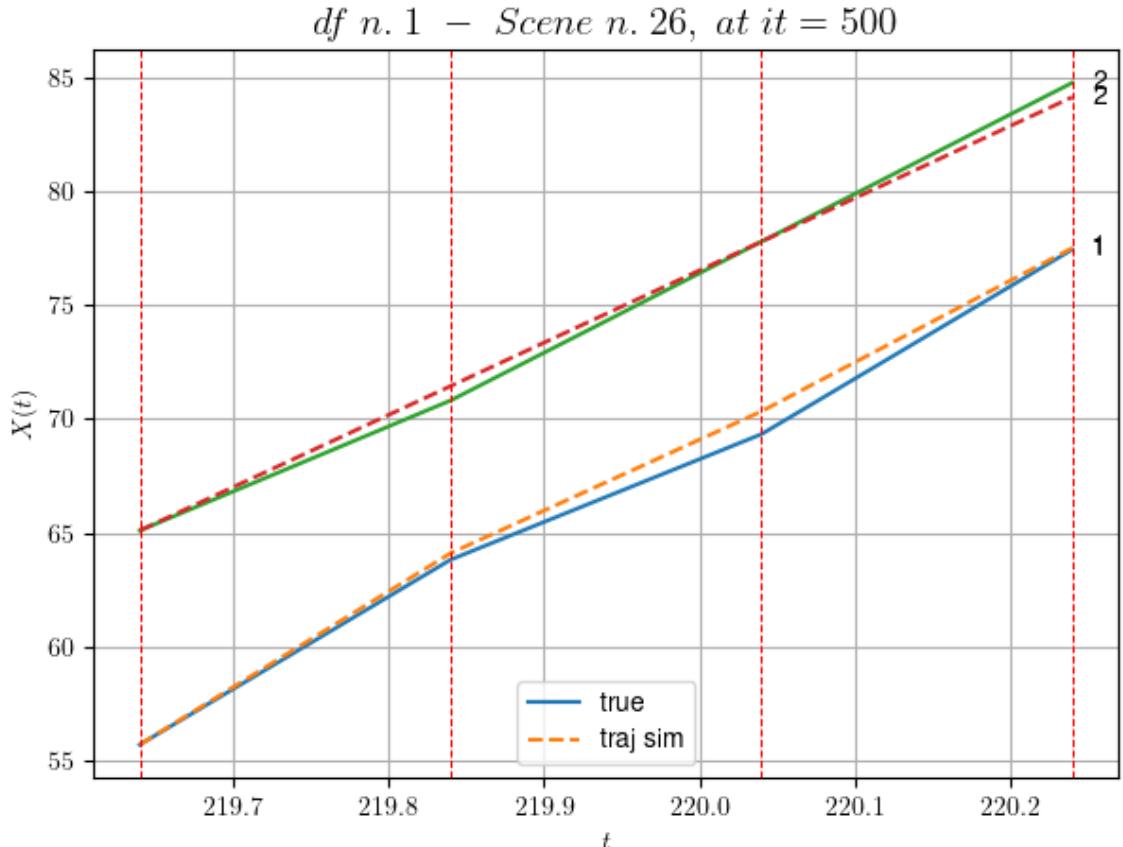
We have 3 time intervals inside [219.64, 220.24]

- Time interval n.0: [219.64, 219.84]
 - * y_true: [40.60281708]
 - * v_ann: [42.02756881713867, 31.715821070729504]

-
- Time interval n.1: [219.84, 220.04]
 - * y_true: [27.552367]
 - * v_ann: [31.14098358154297, 31.715821070729504]
-
-

- Time interval n.2: [220.04, 220.24]
 * y_true: [40.55423042]
 * v_ann: [35.85697555541992, 31.715821070729504]

* err= 0.23638119474806715
 * Learning rate NN = 0.0002952449722215533
 * diff = 0.0004881347971822103



For scene 26/109

* use LR_NN=0.0005 with err=0.5781724448633925 at it=24
 * v0_scn_mean = 31.647188227913947
 * MAE = 0.23638119474806715

df n.1, scene n.27/109

We have 3 time intervals inside [230.04, 230.64]

- Time interval n.0: [230.04, 230.24]
 * y_true: [32.9915228]
 * v_ann: [33.33384323120117, 32.80710231491808]

- Time interval n.1: [230.24, 230.44]
 * y_true: [28.89168758]
 * v_ann: [32.05051040649414, 32.80710231491808]

```

-----  

- Time interval n.2: [230.44, 230.64]  

* y_true: [37.53279475]  

* v_ann: [34.23235321044922, 32.80710231491808]
-----
```

```

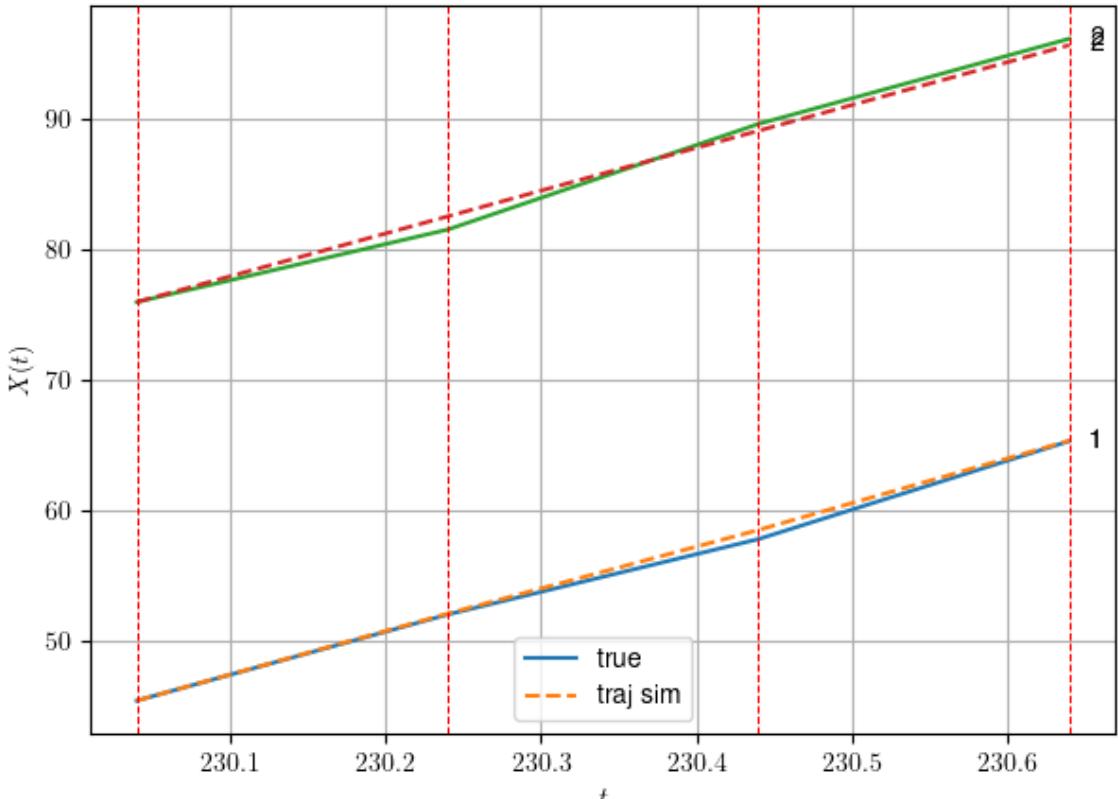
-----  

* err= 0.25442902184304567  

* Learning rate NN = 2.952449540316593e-05  

* diff = 2.8019499903886302e-05
-----
```

df n. 1 – Scene n. 27, at it = 500



For scene 27/109

```

* use LR_NN=5e-05 with err=1.0252670054313446 at it=24
* v0_scn_mean = 32.694818222342725
* MAE = 0.2532636907248022
-----
```

df n.1, scene n.28/109

```

=====  

=====  

We have 4 time intervals inside [239.44,240.24]  

- Time interval n.0: [239.44, 239.64]  

* y_true: [28.64102922]  

* v_ann: [40.26557540893555, 25.426381424530376]
-----
```

```

-----  

- Time interval n.1: [239.64, 239.84]  

* y_true: [37.49184091]  

* v_ann: [37.1320915222168, 25.426381424530376]
-----
```

```

-----  

    - Time interval n.2: [239.84, 240.04]  

      * y_true: [42.66274465]  

      * v_ann: [32.69806671142578, 25.426381424530376]
-----
```

```

-----  

    - Time interval n.3: [240.04, 240.24]  

      * y_true: [35.12300522]  

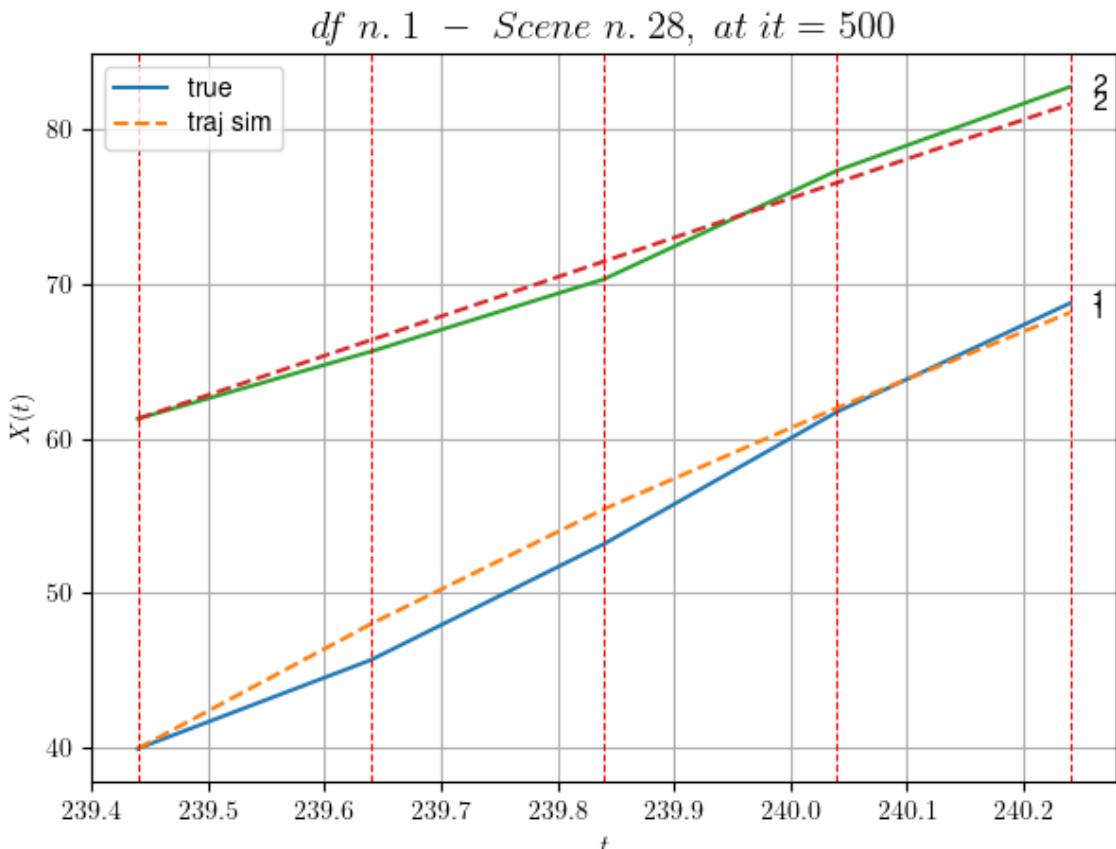
      * v_ann: [30.787067413330078, 25.426381424530376]
-----
```

```

* err= 1.462930786969823  

* Learning rate NN = 2.3914839403005317e-05  

* diff = 0.0021084036160607944
```



For scene 28/109

```

* use LR_NN=5e-05 with err=3.5085897125018315 at it=24
* v0_scn_mean = 25.609326167514045
* MAE = 1.4563583923411692
=====
```

df n.1, scene n.29/109

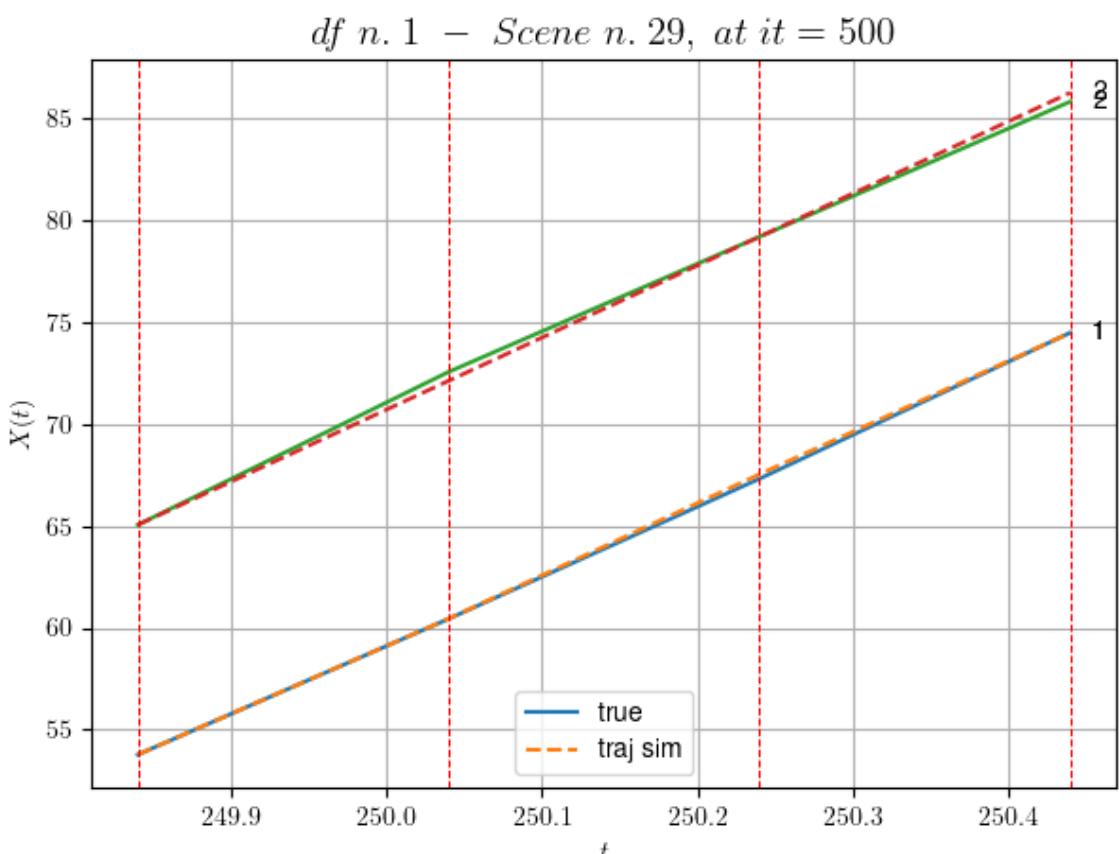
```

=====
We have 3 time intervals inside [249.84,250.44]
- Time interval n.0: [249.84, 250.04]
  * y_true: [33.33234882]
  * v_ann: [33.37344741821289, 35.36623656084879]
```

- Time interval n.1: [250.04, 250.24]
 - * y_true: [34.40255424]
 - * v_ann: [35.45610427856445, 35.36623656084879]

- Time interval n.2: [250.24, 250.44]
 - * y_true: [35.86374718]
 - * v_ann: [34.750301361083984, 35.36623656084879]

```
* err= 0.053840222608662947  
* Learning rate NN = 5.904899080633186e-05  
* diff = 2.2382127315770384e-06
```



For scene 29/109
* use LR_NN=0.0001 with err=1.834938830966284 at it=24
* vθ_scn_mean = 35.151587098455515
* MAF = 0.04759905150983547

df n 1 scene n 30/109

We have 4 time intervals inside [251.44, 252.24]
- Time interval n.0: [251.44, 251.64]
 * y true: [32.20057892]

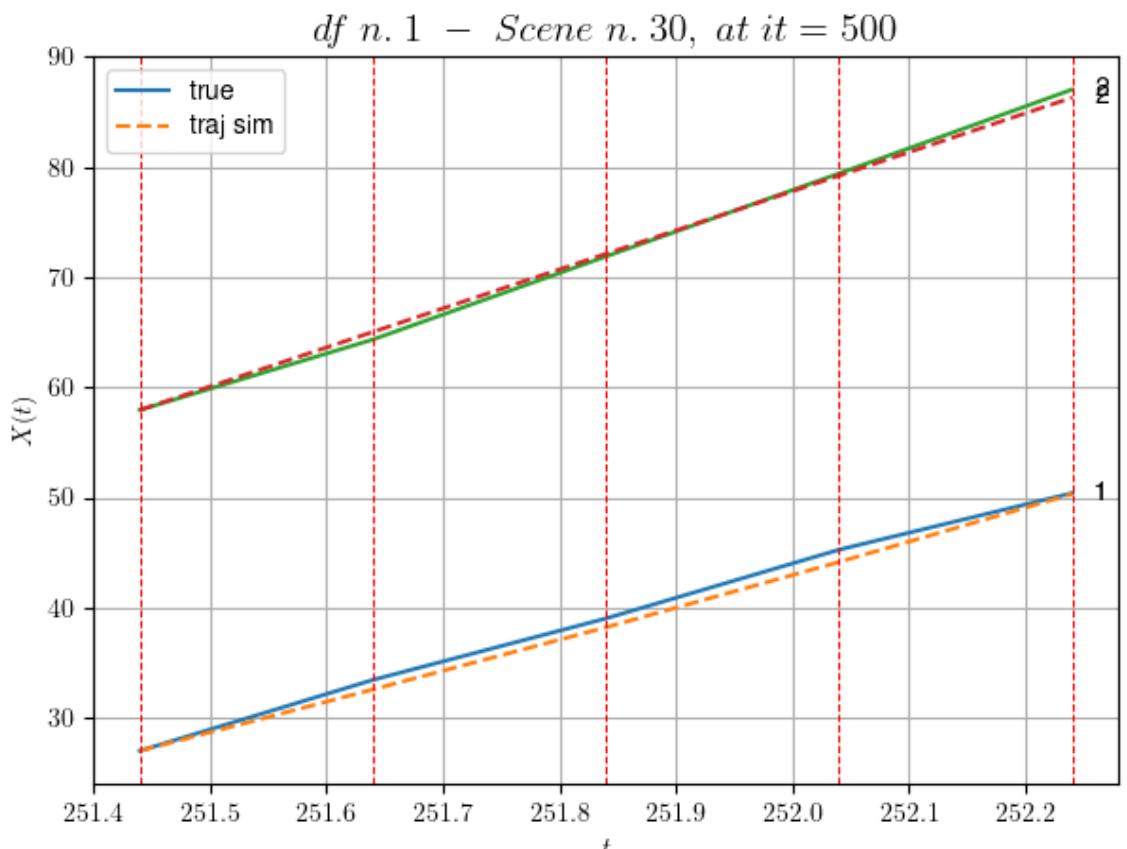
* v_ann: [27.856853485107422, 35.46332801832296]

- Time interval n.1: [251.64, 251.84]
* y_true: [27.90071663]
* v_ann: [28.198200225830078, 35.46332801832296]

- Time interval n.2: [251.84, 252.04]
* y_true: [31.20108088]
* v_ann: [29.674415588378906, 35.46332801832296]

- Time interval n.3: [252.04, 252.24]
* y_true: [25.7011433]
* v_ann: [30.82391929626465, 35.46332801832296]

* err= 0.3776650897849606
* Learning rate NN = 2.3914839403005317e-05
* diff = 1.667390778875566e-05



```
For scene 30/109
* use LR_NN=5e-05 with err=4.568795691740993 at it=24
* v0_scn_mean = 35.244794897631564
* MAE = 0.37653614351478165
```

```
=====
=====
```

```
df n.1, scene n.31/109
```

```
=====
=====
```

```
We have 10 time intervals inside [261.64,263.64]
```

```
- Time interval n.0: [261.64, 261.84]
  * y_true: [20.93010778]
  * v_ann: [25.443452835083008, 31.892740284545443]
```

```
-----
-----
```

```
- Time interval n.1: [261.84, 262.04]
  * y_true: [19.94015095]
  * v_ann: [31.050643920898438, 31.892740284545443]
```

```
-----
-----
```

```
- Time interval n.2: [262.04, 262.24]
  * y_true: [30.02039251]
  * v_ann: [32.620933532714844, 31.892740284545443]
```

```
-----
-----
```

```
- Time interval n.3: [262.24, 262.44]
  * y_true: [42.44088104]
  * v_ann: [32.55246353149414, 31.892740284545443]
```

```
-----
-----
```

```
- Time interval n.4: [262.44, 262.64]
  * y_true: [29.93084335]
  * v_ann: [27.678495407104492, 31.892740284545443]
```

```
-----
-----
```

```
- Time interval n.5: [262.64, 262.84]
  * y_true: [34.57147294]
  * v_ann: [28.028785705566406, 31.892740284545443]
```

```
-----
-----
```

```
- Time interval n.6: [262.84, 263.04]
  * y_true: [34.76181544]
  * v_ann: [29.06496238708496, 31.892740284545443]
```

```
-----
-----
```

```
- Time interval n.7: [263.04, 263.24]
  * y_true: [23.95156631]
  * v_ann: [30.486106872558594, 31.892740284545443]
```

```

-----  

    - Time interval n.8: [263.24, 263.44]  

      * y_true: [27.4721836]  

      * v_ann: [35.751583099365234, 31.892740284545443]
-----
```

```

-----  

    - Time interval n.9: [263.44, 263.64]  

      * y_true: [43.4543127]  

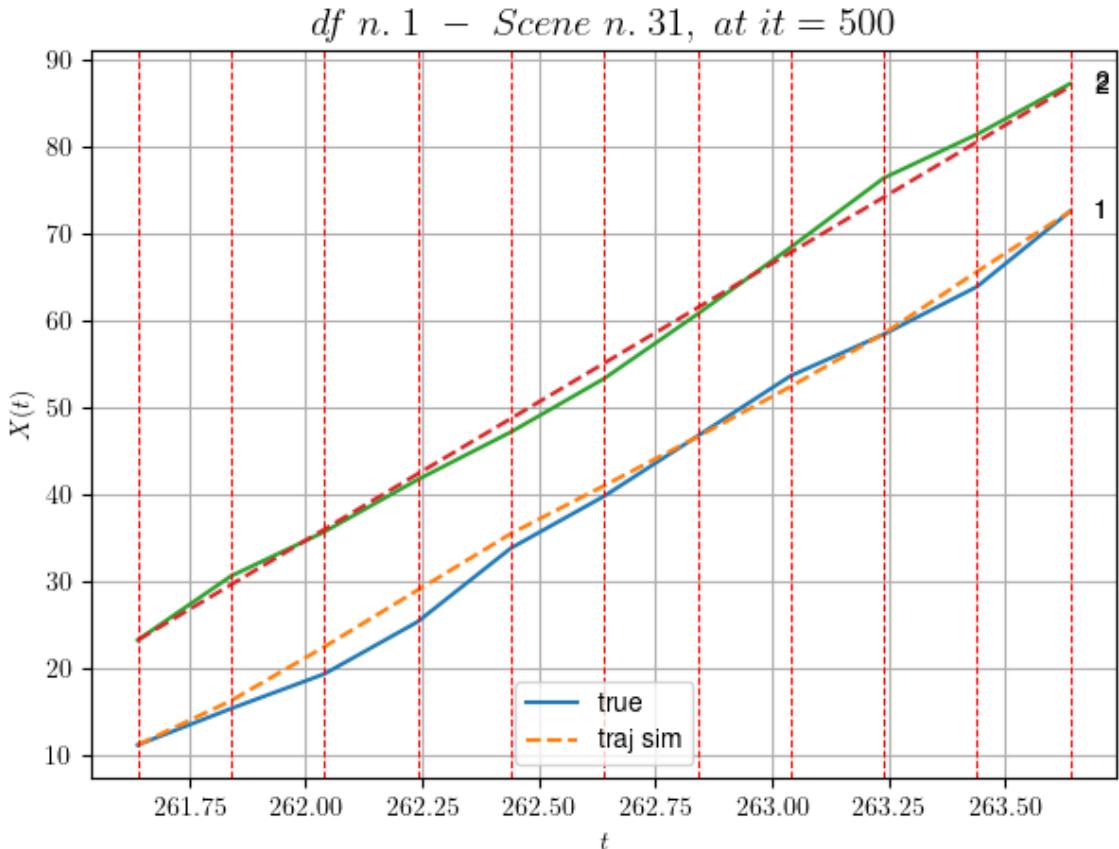
      * v_ann: [34.70917892456055, 31.892740284545443]
-----
```

```

* err= 2.104484703487021  

* Learning rate NN = 1.3508510164683685e-05  

* diff = 0.0025487324257968957
```



For scene 31/109

```

* use LR_NN=0.0001 with err=4.8332237838397045 at it=24  

* v0_scn_mean = 31.817030673178394  

* MAE = 2.0555887601224687
=====
```

df n.1, scene n.32/109

```

=====
```

We have 3 time intervals inside [271.04, 271.64]

```

    - Time interval n.0: [271.04, 271.24]  

      * y_true: [29.28204901]  

      * v_ann: [31.154441833496094, 36.298884665016324]
=====
```

```

- Time interval n.1: [271.24, 271.44]
  * y_true: [38.30326342]
  * v_ann: [36.76161193847656, 36.298884665016324]

```

```

- Time interval n.2: [271.44, 271.64]
  * y_true: [35.20368408]
  * v_ann: [35.120872497558594, 36.298884665016324]

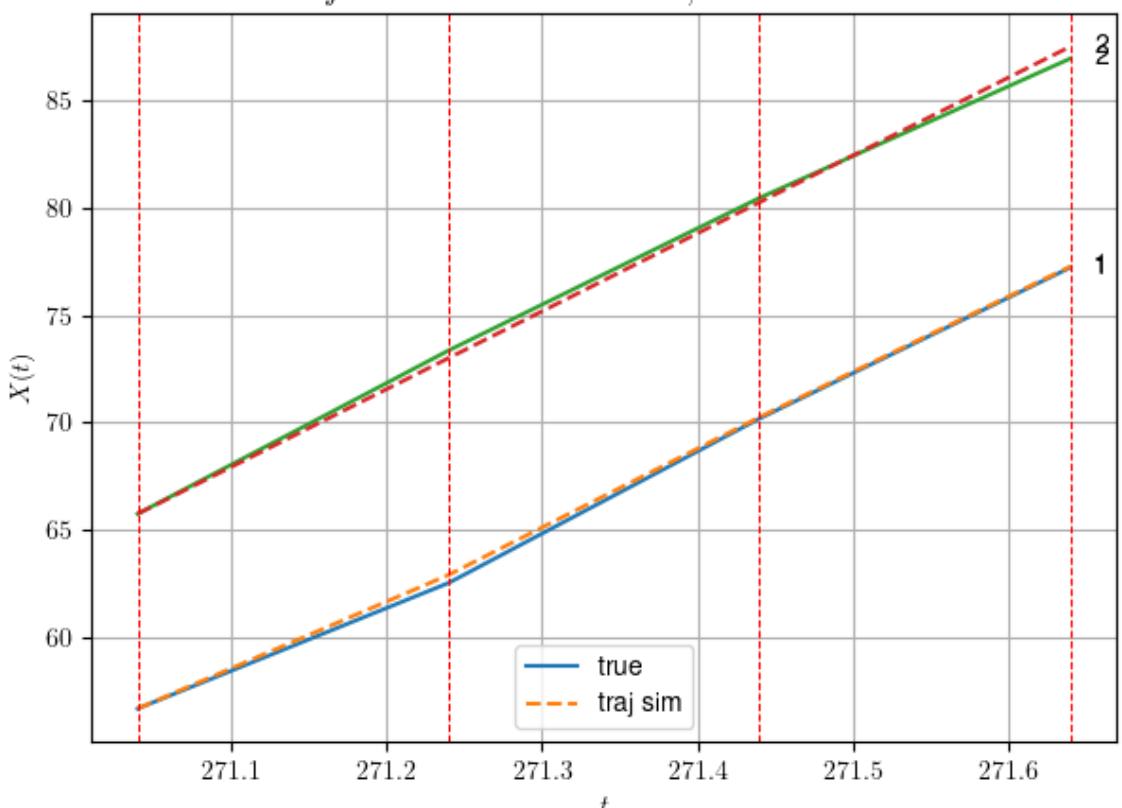
```

```

* err= 0.07837994849053485
* Learning rate NN = 5.904899080633186e-05
* diff = 0.00020160002720101270

```

df n. 1 – Scene n. 32, at it = 500



For scene 32/109

```

* use LR_NN=0.0001 with err=2.5681258235664246 at it=24
* v0_scn_mean = 36.046929278462486
* MAE = 0.07587311417695626

```

df n.1, scene n.33/109

We have 4 time intervals inside [272.24, 273.04]

- Time interval n.0: [272.24, 272.44]
 - * y_true: [28.87017174]

```
* v_ann: [33.135982513427734, 35.468782603100294]
```

```
- Time interval n.1: [272.44, 272.64]
```

```
* y_true: [34.43039204]
```

```
* v_ann: [33.4547119140625, 35.468782603100294]
```

```
- Time interval n.2: [272.64, 272.84]
```

```
* y_true: [31.36055806]
```

```
* v_ann: [34.384578704833984, 35.468782603100294]
```

```
- Time interval n.3: [272.84, 273.04]
```

```
* y_true: [41.11115543]
```

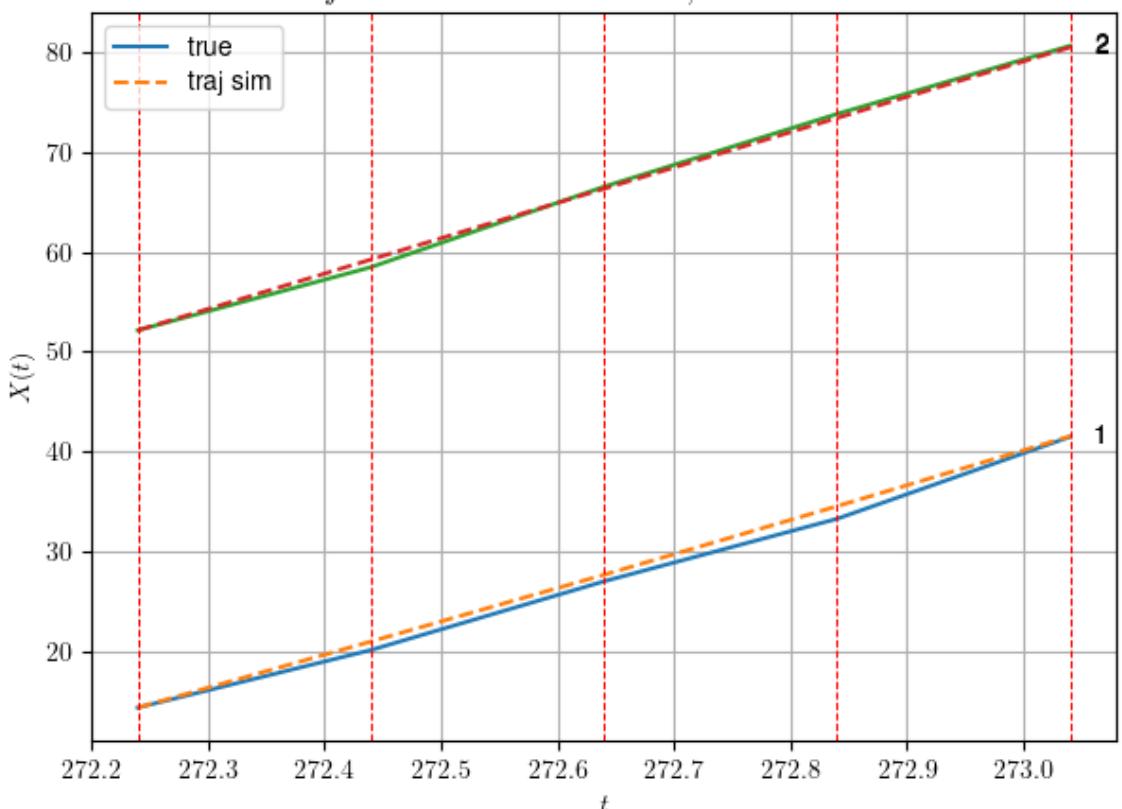
```
* v_ann: [35.081878662109375, 35.468782603100294]
```

```
* err= 0.3579736888257026
```

```
* Learning rate NN = 4.782968062500004e-06
```

```
* diff = 0.00017026622230256705
```

df n. 1 – Scene n. 33, at it = 500



For scene 33/109

```
* use LR_NN=1e-05 with err=4.2601126902093815 at it=24
```

```
* v0_scn_mean = 35.250031299017486
```

```
* MAE = 0.35747367022967147
```

```
df n.1, scene n.34/109
=====
=====
We have 5 time intervals inside [291.64,292.64]
- Time interval n.0: [291.64, 291.84]
  * y_true: [35.45036349]
  * v_ann: [37.81254577636719, 34.11909568875066]

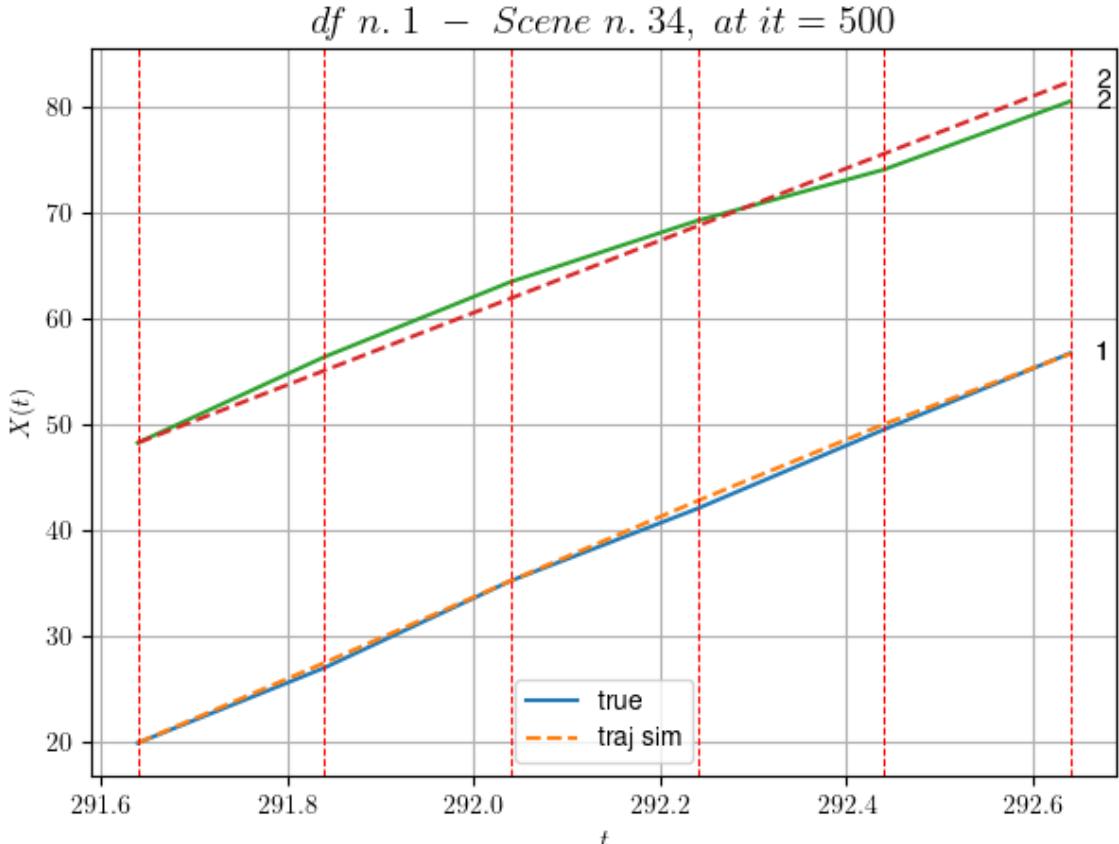
-----
- Time interval n.1: [291.84, 292.04]
  * y_true: [41.11075316]
  * v_ann: [38.78636169433594, 34.11909568875066]

-----
- Time interval n.2: [292.04, 292.24]
  * y_true: [34.09093472]
  * v_ann: [37.69365310668945, 34.11909568875066]

-----
- Time interval n.3: [292.24, 292.44]
  * y_true: [37.32147853]
  * v_ann: [36.19877243041992, 34.11909568875066]

-----
- Time interval n.4: [292.44, 292.64]
  * y_true: [36.09190656]
  * v_ann: [33.247806549072266, 34.11909568875066]

-----
* err= 0.9204867442322391
* Learning rate NN = 1.9371018424862996e-05
* diff = 0 000892984089907567
```



For scene 34/109

- * use LR_NN=5e-05 with err=2.7976673958866005 at it=24
- * v0_scn_mean = 33.95433186123175
- * MAE = 0.8019000935522761

df n.1, scene n.35/109

We have 3 time intervals inside [294.64, 295.24]

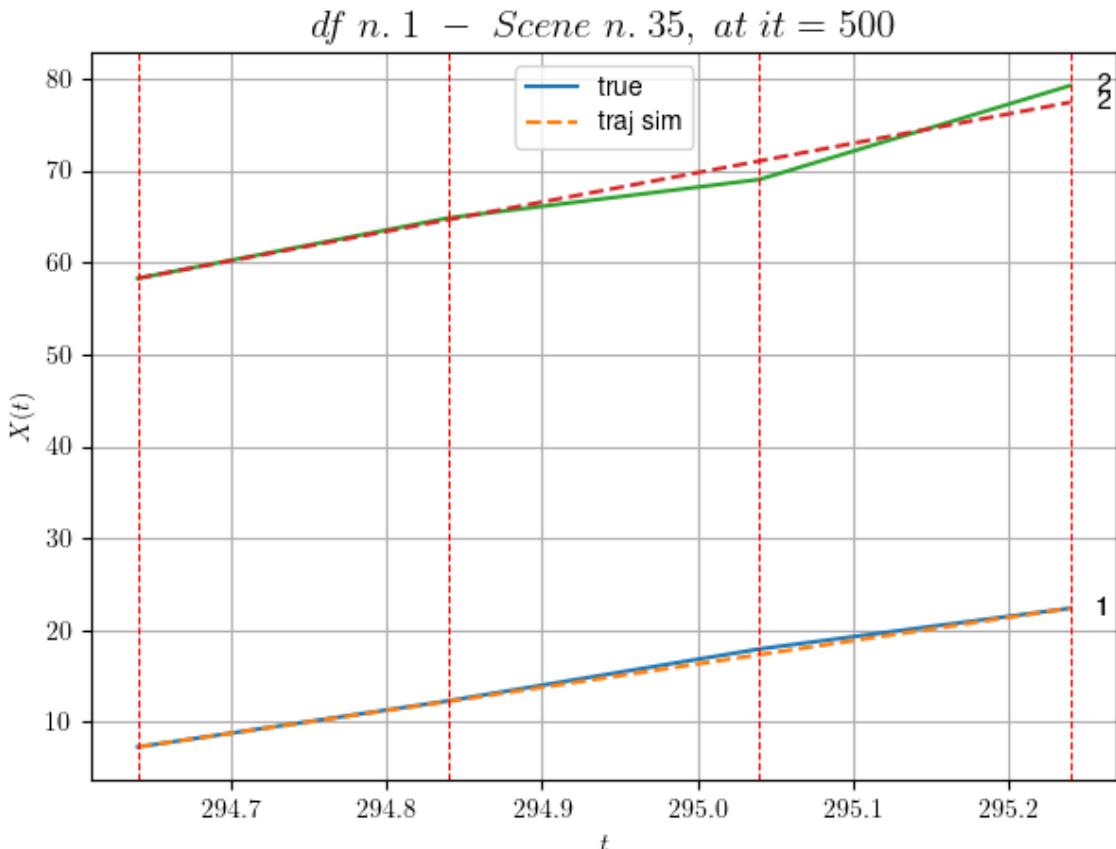
- Time interval n.0: [294.64, 294.84]
 - * y_true: [25.10005748]
 - * v_ann: [24.735626220703125, 31.912591419185457]

- Time interval n.1: [294.84, 295.04]
 - * y_true: [28.17013329]
 - * v_ann: [25.44577980041504, 31.912591419185457]

- Time interval n.2: [295.04, 295.24]
 - * y_true: [22.14017228]
 - * v_ann: [25.276737213134766, 31.912591419185457]

- * err= 0.9733073013638868
- * Learning rate NN = 2.952449540316593e-05

* diff = 1.4484054122632095e-05



For scene 35/109

* use LR_NN=5e-05 with err=1.3920968832578795 at it=24
 * v0_scn_mean = 31.836087762433248
 * MAE = 0.9727177630458882

df n.1, scene n.36/109

We have 4 time intervals inside [296.44, 297.24]

- Time interval n.0: [296.44, 296.64]
 - * y_true: [27.57673439]
 - * v_ann: [24.974781036376953, 32.254865471371716]

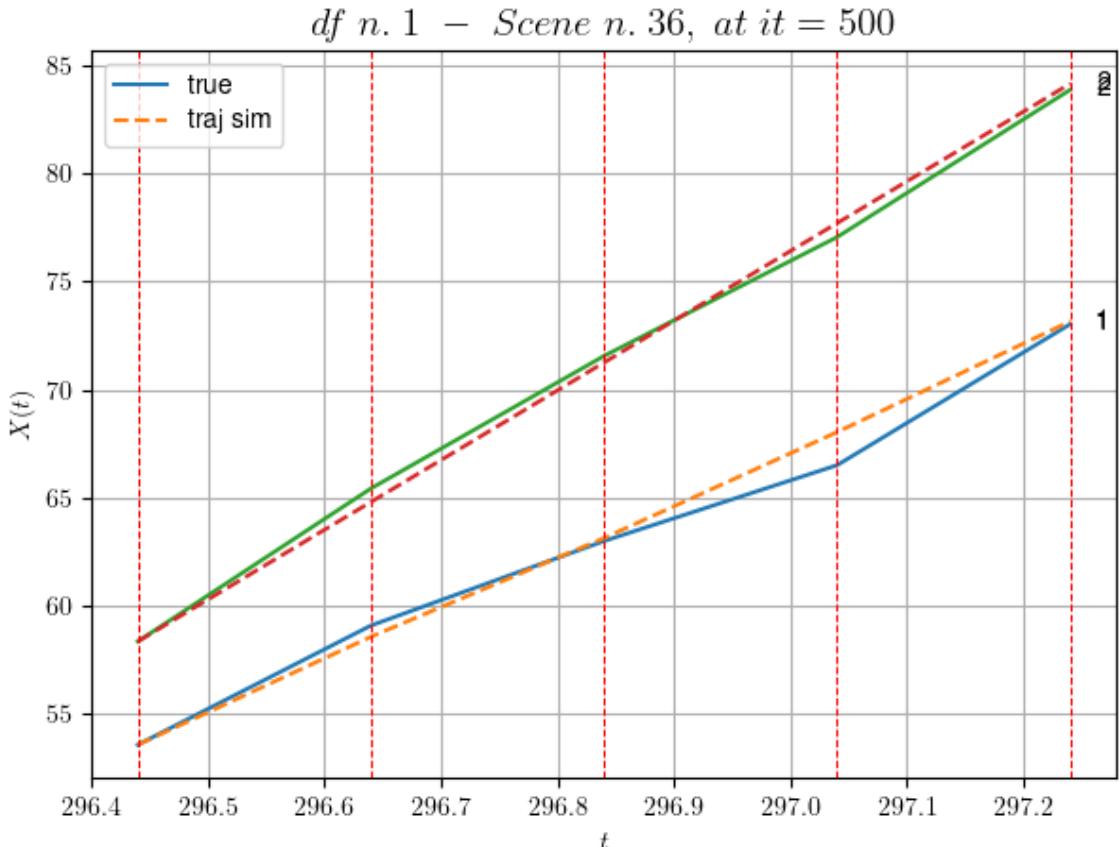
- Time interval n.1: [296.64, 296.84]
 - * y_true: [19.54627216]
 - * v_ann: [22.83356285095215, 32.254865471371716]

- Time interval n.2: [296.84, 297.04]
 - * y_true: [17.55160174]
 - * v_ann: [24.51465606689453, 32.254865471371716]

- Time interval n.3: [297.04, 297.24]

```
* y_true: [32.62813612]
* v_ann: [25.62565803527832, 32.254865471371716]
```

```
* err= 0.36261545096239084
* Learning rate NN = 0.000478296831715852
* diff = 0.000944688850608888
```



For scene 36/109

```
* use LR_NN=0.001 with err=1.4552527809282838 at it=24
* v0_scn_mean = 32.16467085253437
* MAE = 0.3623887749519716
```

df n.1, scene n.37/109

We have 4 time intervals inside [298.04, 298.84]

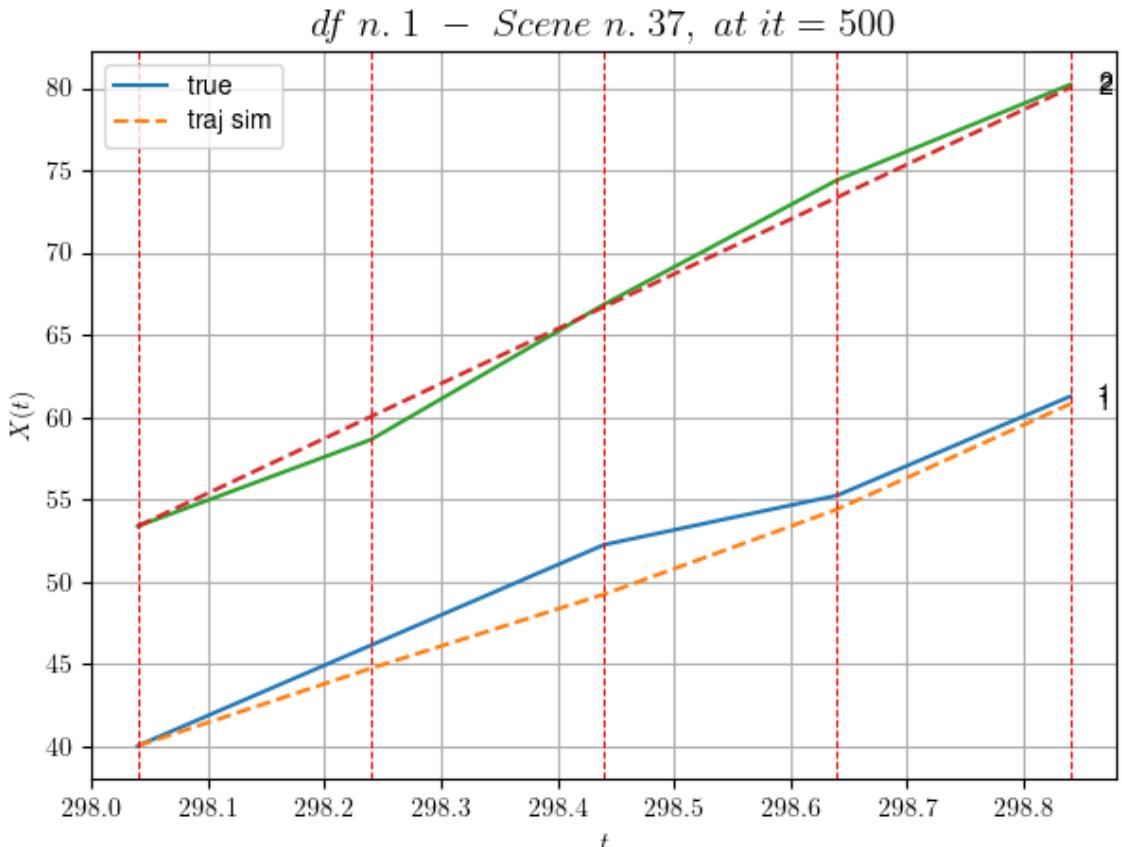
- Time interval n.0: [298.04, 298.24]
 - * y_true: [30.57625271]
 - * v_ann: [23.555261611938477, 33.34266245905383]

- Time interval n.1: [298.24, 298.44]
 - * y_true: [30.57625271]
 - * v_ann: [22.530193328857422, 33.34266245905383]

- Time interval n.2: [298.44, 298.64]
 * y_true: [15.00082942]
 * v_ann: [25.856847763061523, 33.34266245905383]

- Time interval n.3: [298.64, 298.84]
 * y_true: [30.12717078]
 * v_ann: [32.08169937133789, 33.34266245905383]

* err= 1.510553760330186
 * Learning rate NN = 2.3914839403005317e-05
 * diff = 0.001939481750795169



For scene 37/109
 * use LR_NN=5e-05 with err=3.554109597686404 at it=24
 * v0_scn_mean = 33.20895596071353
 * MAE = 1.5063253355130781

df n.1, scene n.38/109

We have 5 time intervals inside [301.44,302.44]
 - Time interval n.0: [301.44, 301.64]
 * y_true: [23.98073382]
 * v_ann: [30.541053771972656, 25.446081747008186]

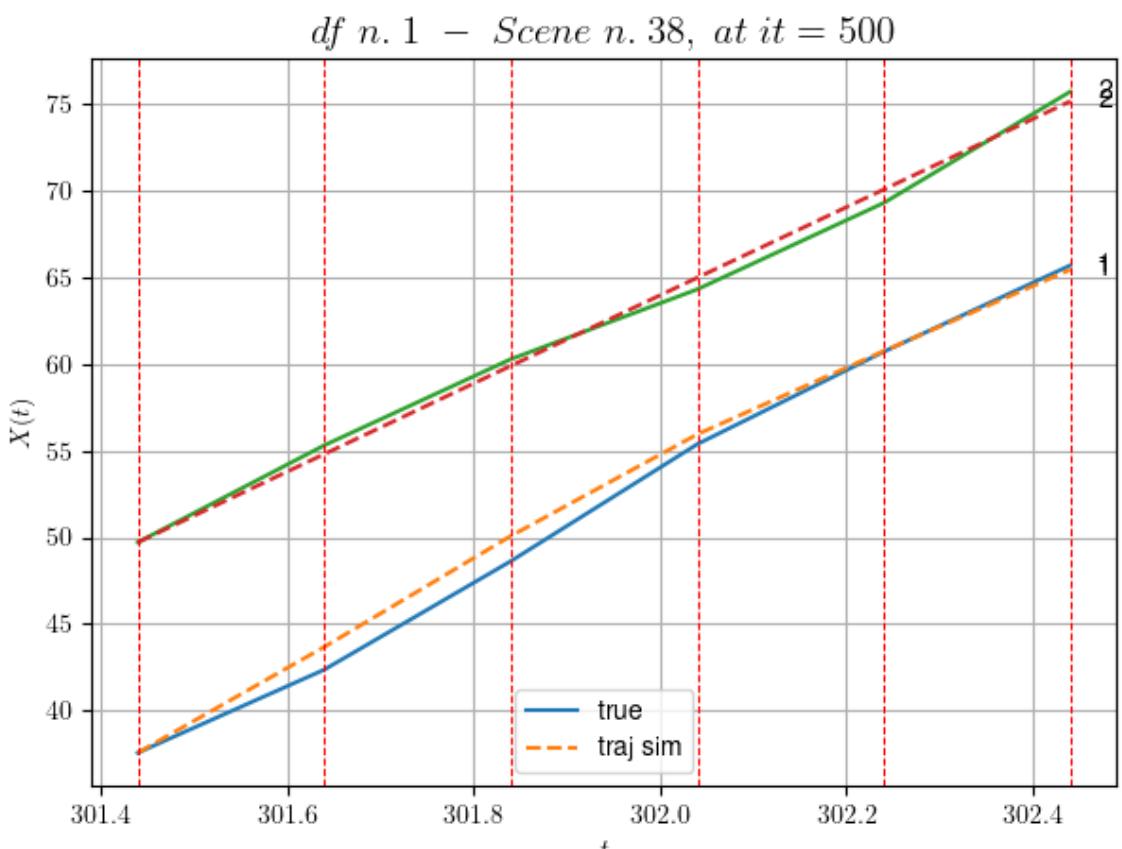
- Time interval n.1: [301.64, 301.84]
 * y_true: [31.29145934]
 * v_ann: [31.98587417602539, 25.446081747008186]

- Time interval n.2: [301.84, 302.04]
 * y_true: [33.7516476]
 * v_ann: [29.33129119873047, 25.446081747008186]

- Time interval n.3: [302.04, 302.24]
 * y_true: [26.67180193]
 * v_ann: [24.037858963012695, 25.446081747008186]

- Time interval n.4: [302.24, 302.44]
 * y_true: [24.90184051]
 * v_ann: [23.464984893798828, 25.446081747008186]

* err= 0.4982639519710791
 * Learning rate NN = 1.9371018424862996e-05
 * diff = 0.002386696235461172



For scene 38/109

* use LR_NN=5e-05 with err=4.6050060899174525 at it=24
 * v0_scn_mean = 25.62823847709329
 * MAE = 0.4982639519710791

df n.1, scene n.39/109

We have 2 time intervals inside [307.24,307.64]

- Time interval n.0: [307.24, 307.44]

- * y_true: [32.90225561]

- * v_ann: [29.826974868774414, 27.87316406556807]

- Time interval n.1: [307.44, 307.64]

- * y_true: [25.81209386]

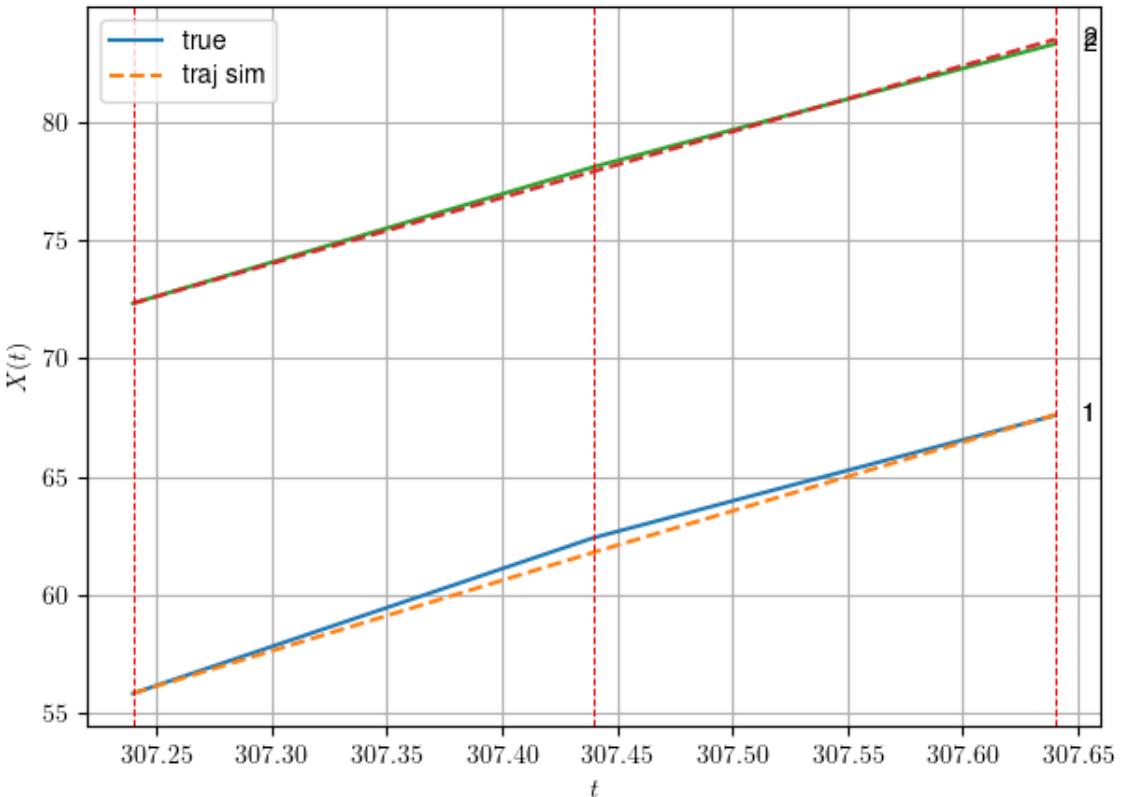
- * v_ann: [29.012014389038086, 27.87316406556807]

- * err= 0.07543982890909977

- * Learning rate NN = 7.289998757187277e-05

- * ~~44.44 - 1.522121540060451e-05~~

df n. 1 – Scene n. 39, at it = 500



For scene 39/109

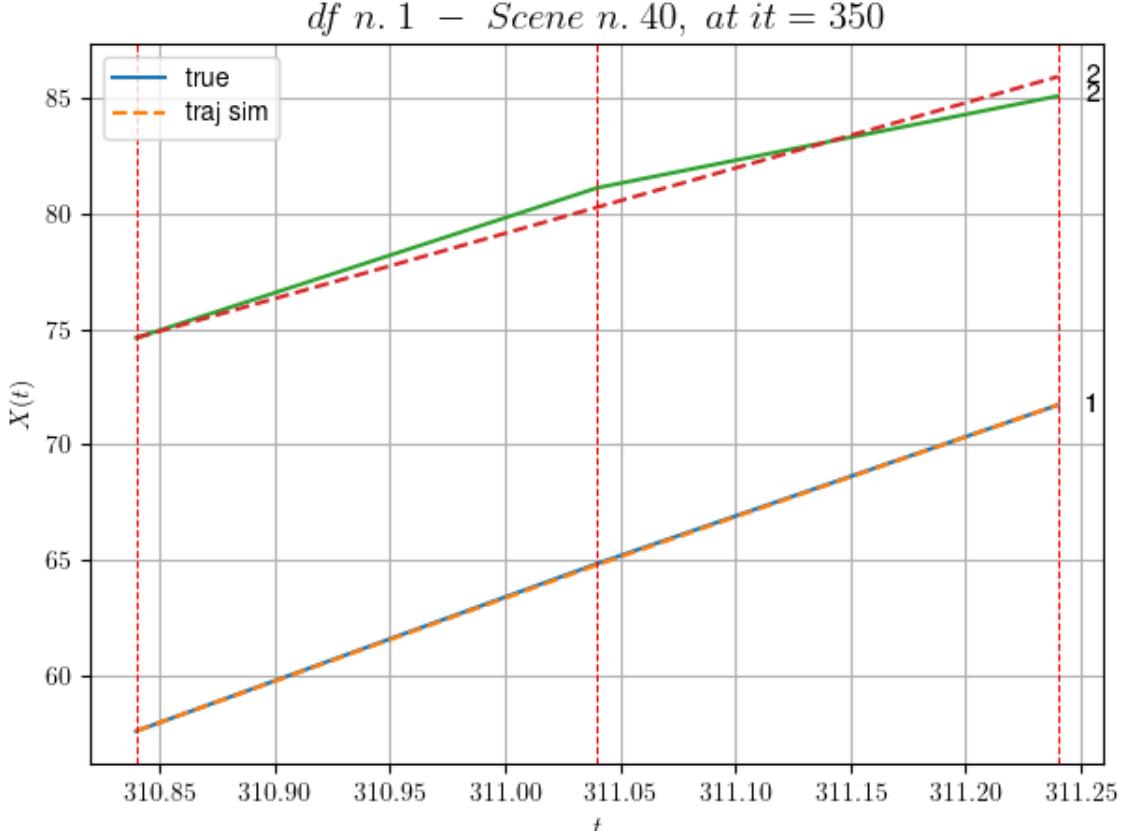
- * use LR_NN=0.0001 with err=0.25261413033134283 at it=24

- * v0_scn_mean = 27.958237502928604

- * MAE = 0.07462840378197053

df n.1, scene n.40/109

```
=====
=====
We have 2 time intervals inside [310.84,311.24]
* err= 0.23612391874334587
* Learning rate NN = 8.099999104160815e-05
* diff = 1.0249606952061896e-07
```



For scene 40/109

```
* use LR_NN=0.0001 with err=0.4207674561434574 at it=24
* v0_scn_mean = 28.43473877793114
* MAE = 0.23612391874334587
```

df n.1, scene n.41/109

```
=====
=====
We have 3 time intervals inside [316.44,317.04]
```

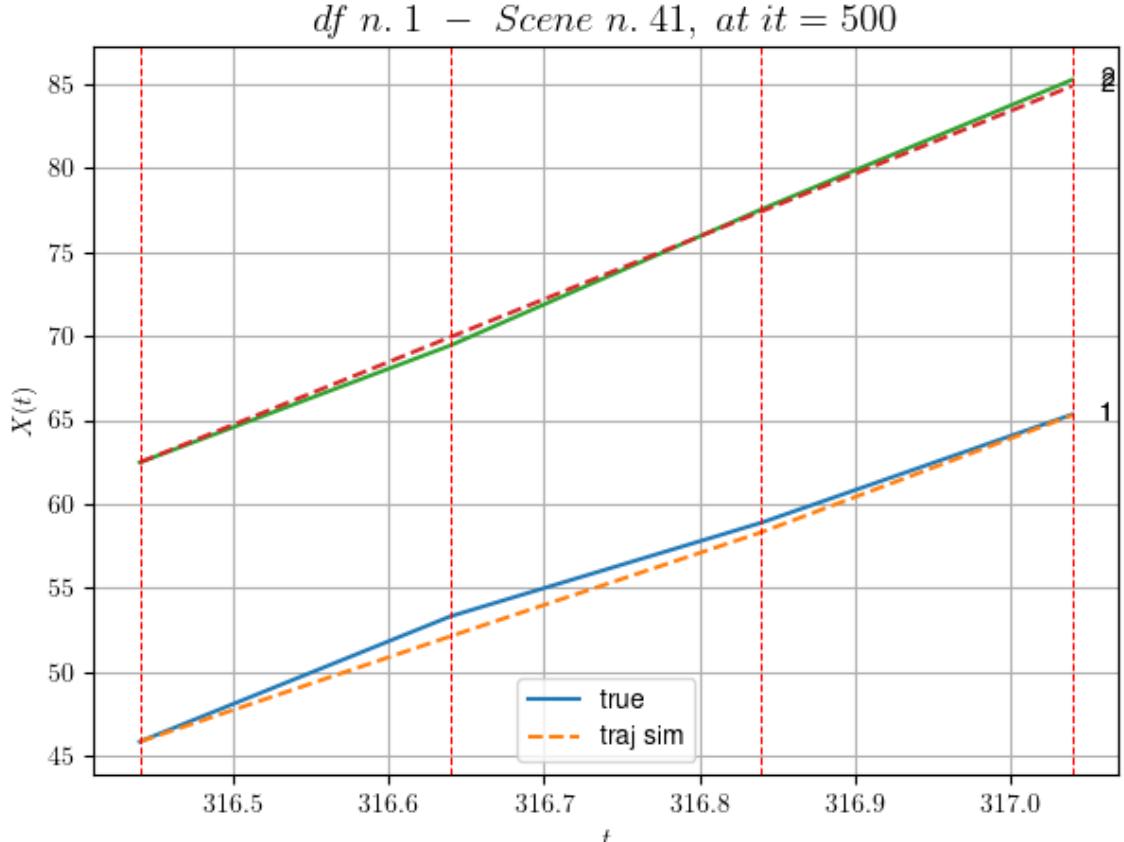
- Time interval n.0: [316.44, 316.64]
 - * y_true: [37.30178767]
 - * v_ann: [31.36556625366211, 37.33434122714749]

- Time interval n.1: [316.64, 316.84]
 - * y_true: [27.85170332]
 - * v_ann: [30.93559455871582, 37.33434122714749]

- Time interval n.2: [316.84, 317.04]
 - * y_true: [32.2024108]

```
* v_ann: [34.816558837890625, 37.33434122714749]
```

```
* err= 0.26794441397390456
* Learning rate NN = 2.952449540316593e-05
* diff = 1.6624127638698027e-05
```



For scene 41/109

```
* use LR_NN=5e-05 with err=4.399654608584244 at it=24
* v0_scn_mean = 37.04096757811763
* MAE = 0.2658044333602462
```

df n.1, scene n.42/109

We have 6 time intervals inside [317.64, 318.84]

- Time interval n.0: [317.64, 317.84]
 - * y_true: [33.22656212]
 - * v_ann: [29.71327018737793, 33.194718353653776]

- Time interval n.1: [317.84, 318.04]
 - * y_true: [28.08686413]
 - * v_ann: [31.265888214111328, 33.194718353653776]

- Time interval n.2: [318.04, 318.24]

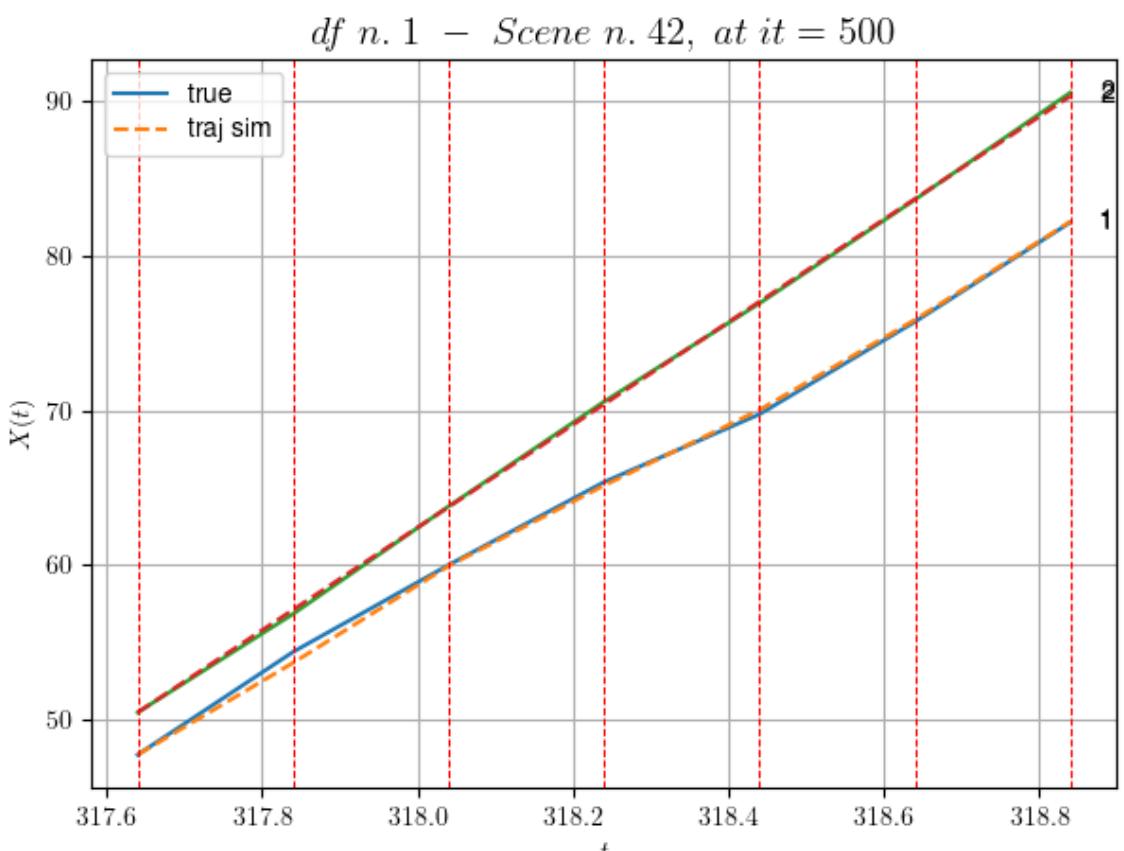
```
* y_true: [26.80193964]
* v_ann: [26.032690048217773, 33.194718353653776]
```

```
- Time interval n.3: [318.24, 318.44]
* y_true: [21.92189]
* v_ann: [24.423383712768555, 33.194718353653776]
```

```
- Time interval n.4: [318.44, 318.64]
* y_true: [29.86332637]
* v_ann: [29.124975204467773, 33.194718353653776]
```

```
- Time interval n.5: [318.64, 318.84]
* y_true: [32.15368857]
* v_ann: [31.728588104248047, 33.194718353653776]
```

```
* err= 0.05851255423148665
* Learning rate NN = 0.00031381050939671695
* diff = 0.0009248143621522834
```



For scene 42/109

```
* use LR_NN=0.001 with err=14.676961122137413 at it=24
* v0_scn_mean = 33.06692961953164
* MAE = 0.05851255423148665
```

```
df n.1, scene n.43/109
```

We have 4 time intervals inside [320.44, 321.24]

- Time interval n.0: [320.44, 320.64]

- * y_true: [33.93064809]

- * v_ann: [33.06517028808594, 32.19336724924354]

- Time interval n.1: [320.64, 320.84]

- * y_true: [36.40102009]

- * v_ann: [34.589637756347656, 32.19336724924354]

- Time interval n.2: [320.84, 321.04]

- * y_true: [31.75123703]

- * v_ann: [33.56001663208008, 32.19336724924354]

- Time interval n.3: [321.04, 321.24]

- * y_true: [30.29153361]

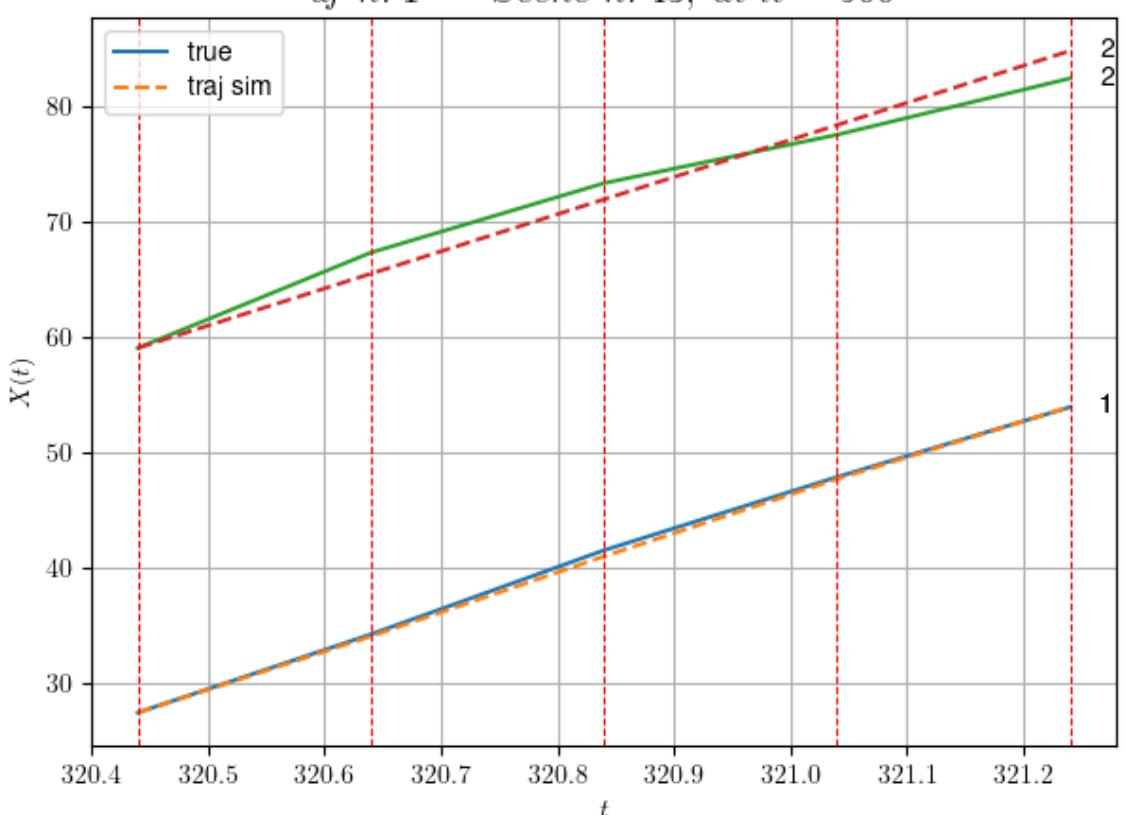
- * v_ann: [31.280317306518555, 32.19336724924354]

- * err= 1.207712152827888

- * Learning rate NN = 2.3914839403005317e-05

- * diff = 2.30878841556148e-06

df n. 1 – Scene n. 43, at it = 500



```
For scene 43/109
* use LR_NN=5e-05 with err=1.135154082324293 at it=24
* v0_scn_mean = 32.10563255929002
* MAE = 1.027224575777777
```

```
=====
=====
```

```
df n.1, scene n.44/109
```

```
=====
=====
```

```
We have 10 time intervals inside [324.44,326.44]
```

- Time interval n.0: [324.44, 324.64]
 - * y_true: [27.85017685]
 - * v_ann: [25.235986709594727, 29.18361402279232]

```
-----
-----
```

- Time interval n.1: [324.64, 324.84]
 - * y_true: [26.1002778]
 - * v_ann: [25.543212890625, 29.18361402279232]

```
-----
-----
```

- Time interval n.2: [324.84, 325.04]
 - * y_true: [26.05041313]
 - * v_ann: [26.73361587524414, 29.18361402279232]

```
-----
-----
```

- Time interval n.3: [325.04, 325.24]
 - * y_true: [27.75061978]
 - * v_ann: [27.945514678955078, 29.18361402279232]

```
-----
-----
```

- Time interval n.4: [325.24, 325.44]
 - * y_true: [28.85087529]
 - * v_ann: [29.22374725341797, 29.18361402279232]

```
-----
-----
```

- Time interval n.5: [325.44, 325.64]
 - * y_true: [31.80128105]
 - * v_ann: [31.33831787109375, 29.18361402279232]

```
-----
-----
```

- Time interval n.6: [325.64, 325.84]
 - * y_true: [22.60113815]
 - * v_ann: [29.579317092895508, 29.18361402279232]

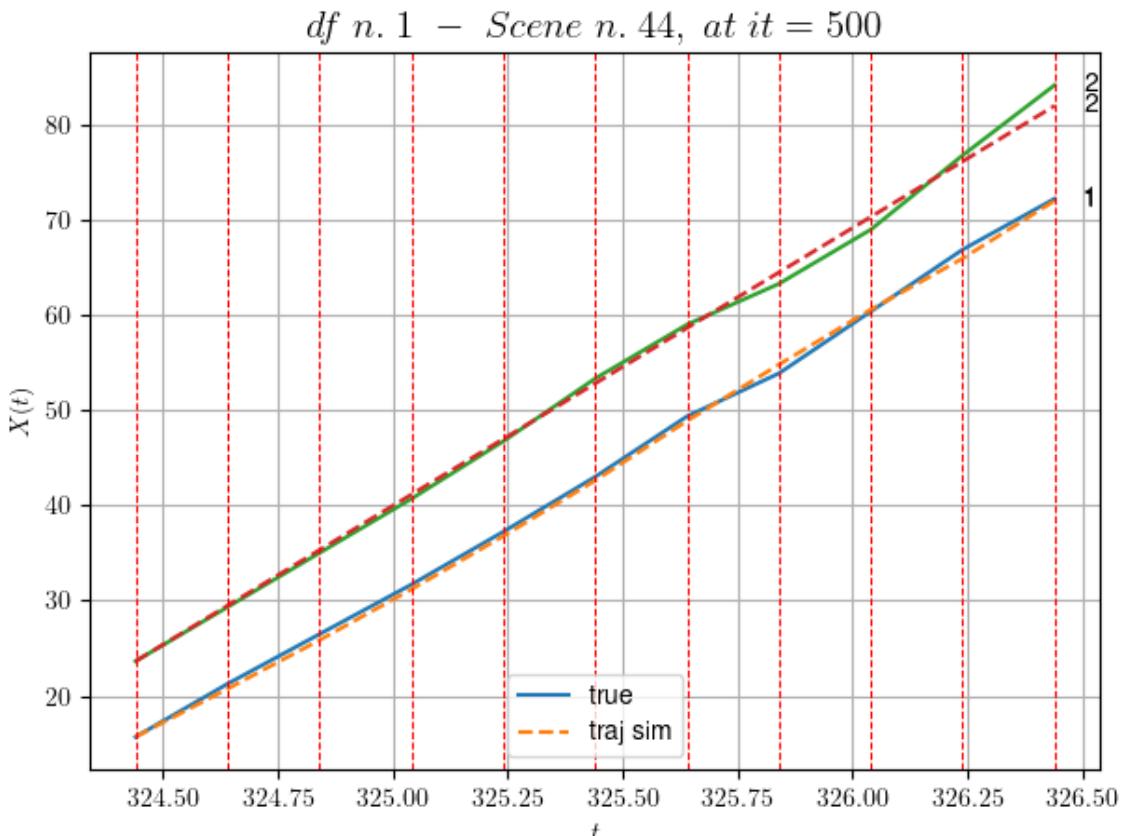
```
-----
-----
```

- Time interval n.7: [325.84, 326.04]
 - * y_true: [32.52725213]
 - * v_ann: [28.93622589111328, 29.18361402279232]

```
- Time interval n.8: [326.04, 326.24]
* y_true: [32.52725213]
* v_ann: [26.892629623413086, 29.18361402279232]
```

```
- Time interval n.9: [326.24, 326.44]
* y_true: [26.72764736]
* v_ann: [30.263349533081055, 29.18361402279232]
```

```
* err= 0.5639109390162071
* Learning rate NN = 6.754255082341842e-06
* diff = 0.00041975349836120834
```



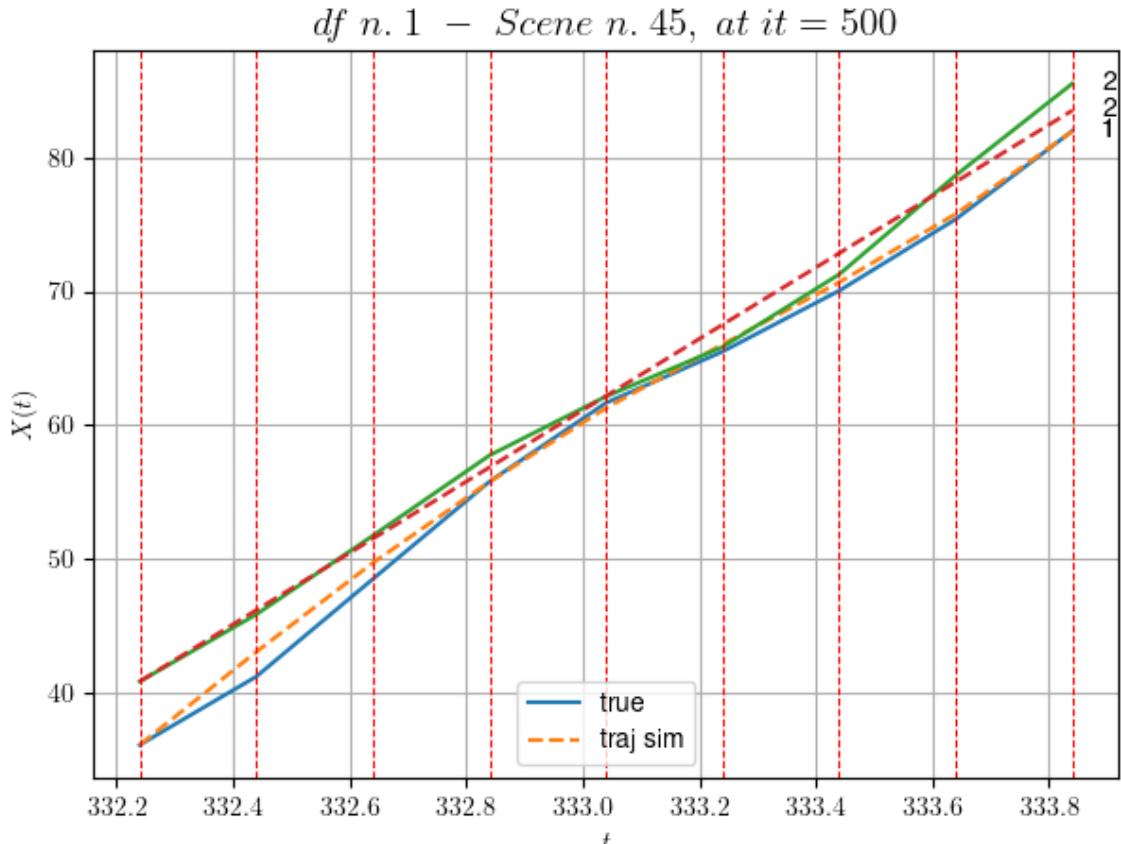
```
* use LR_NN=5e-05 with err=0.9542374887522356 at it=24
* v0_scn_mean = 29.21626946187434
* MAE = 0.5566529346375764
```

df n.1, scene n.45/109

We have 8 time intervals inside [332.24,333.84]

```
- Time interval n.0: [332.24, 332.44]
* y_true: [25.53074236]
* v_ann: [34.74723815917969, 26.651206522068147]
```

```
-----  
-----  
- Time interval n.1: [332.44, 332.64]  
  * y_true: [36.42146061]  
  * v_ann: [33.23136520385742, 26.651206522068147]  
  
-----  
-----  
- Time interval n.2: [332.64, 332.84]  
  * y_true: [36.36192075]  
  * v_ann: [30.27143096923828, 26.651206522068147]  
  
-----  
-----  
- Time interval n.3: [332.84, 333.04]  
  * y_true: [29.40195398]  
  * v_ann: [27.550466537475586, 26.651206522068147]  
  
-----  
-----  
- Time interval n.4: [333.04, 333.24]  
  * y_true: [19.16071664]  
  * v_ann: [23.76521873474121, 26.651206522068147]  
  
-----  
-----  
- Time interval n.5: [333.24, 333.44]  
  * y_true: [22.72210839]  
  * v_ann: [23.17391014099121, 26.651206522068147]  
  
-----  
-----  
- Time interval n.6: [333.44, 333.64]  
  * y_true: [26.70265572]  
  * v_ann: [25.518701553344727, 26.651206522068147]  
  
-----  
-----  
- Time interval n.7: [333.64, 333.84]  
  * y_true: [32.94386414]  
  * v_ann: [30.836933135986328, 26.651206522068147]  
  
-----  
-----  
* err= 0.9076687870167794  
* Learning rate NN = 0.00020589104678947479  
* diff = 0.001913775940596274
```



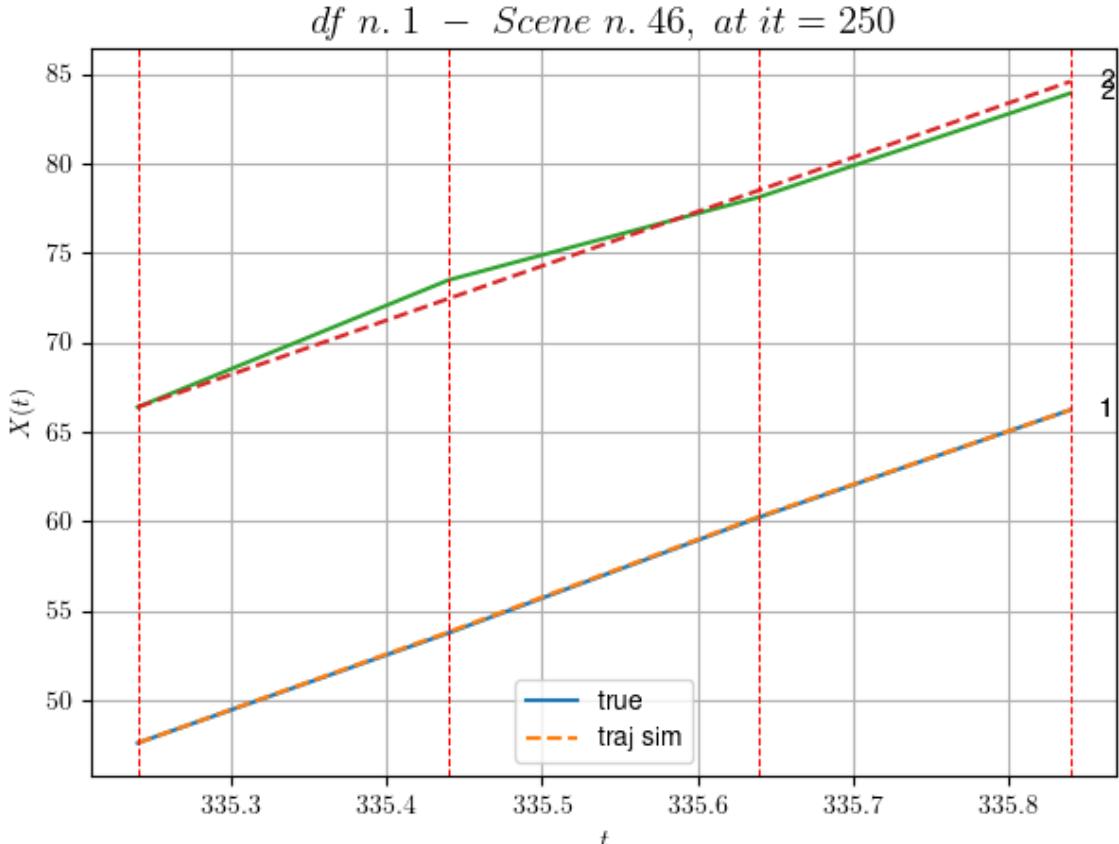
For scene 45/109

- * use LR_NN=0.001 with err=6.4269464418308955 at it=24
- * v0_scn_mean = 26.785158261158653
- * MAE = 0.9040927702210798

df n.1, scene n.46/109

We have 3 time intervals inside [335.24, 335.84]

- * err= 0.20710429335668937
- * Learning rate NN = 8.099999104160815e-05
- * diff = 4.104196667242821e-07



For scene 46/109

- * use LR_NN=0.0001 with err=0.1875640296823696 at it=24
- * v0_scn_mean = 30.310260309222073
- * MAE = 0.19139647722651337

df n.1, scene n.47/109

We have 4 time intervals inside [344.44, 345.24]

- Time interval n.0: [344.44, 344.64]
 - * y_true: [27.53063305]
 - * v_ann: [26.074310302734375, 33.83197138856261]

- Time interval n.1: [344.64, 344.84]
 - * y_true: [26.17089419]
 - * v_ann: [27.197439193725586, 33.83197138856261]

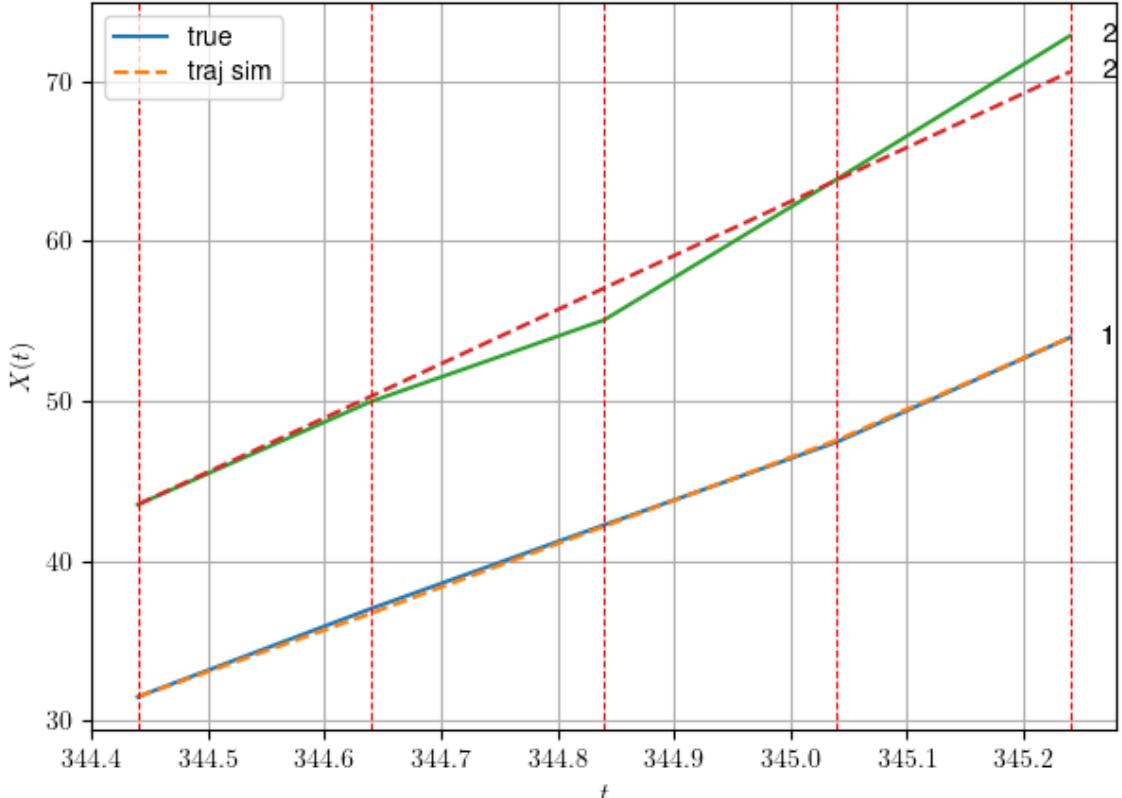
- Time interval n.2: [344.84, 345.04]
 - * y_true: [25.97595237]
 - * v_ann: [26.963035583496094, 33.83197138856261]

- Time interval n.3: [345.04, 345.24]
 - * y_true: [32.67663097]

```
* v_ann: [32.158607482910156, 33.83197138856261]
```

```
* err= 0.9275218868611893
* Learning rate NN = 4.7829678806010634e-05
* diff = 2.0357481841037917e-05
```

df n. 1 – Scene n. 47, at it = 500



For scene 47/109

```
* use LR_NN=0.0001 with err=3.499366691786534 at it=24
* v0_scn_mean = 33.67869253304886
* MAE = 0.9275209766842603
```

df n.1, scene n.48/109

We have 4 time intervals inside [349.64, 350.44]

- Time interval n.0: [349.64, 349.84]
 - * y_true: [34.02093414]
 - * v_ann: [32.10596466064453, 30.663808885196527]

- Time interval n.1: [349.84, 350.04]
 - * y_true: [30.7912183]
 - * v_ann: [31.467323303222656, 30.663808885196527]

- Time interval n.2: [350.04, 350.24]

```
* y_true: [28.60141935]
* v_ann: [29.58568000793457, 30.663808885196527]
```

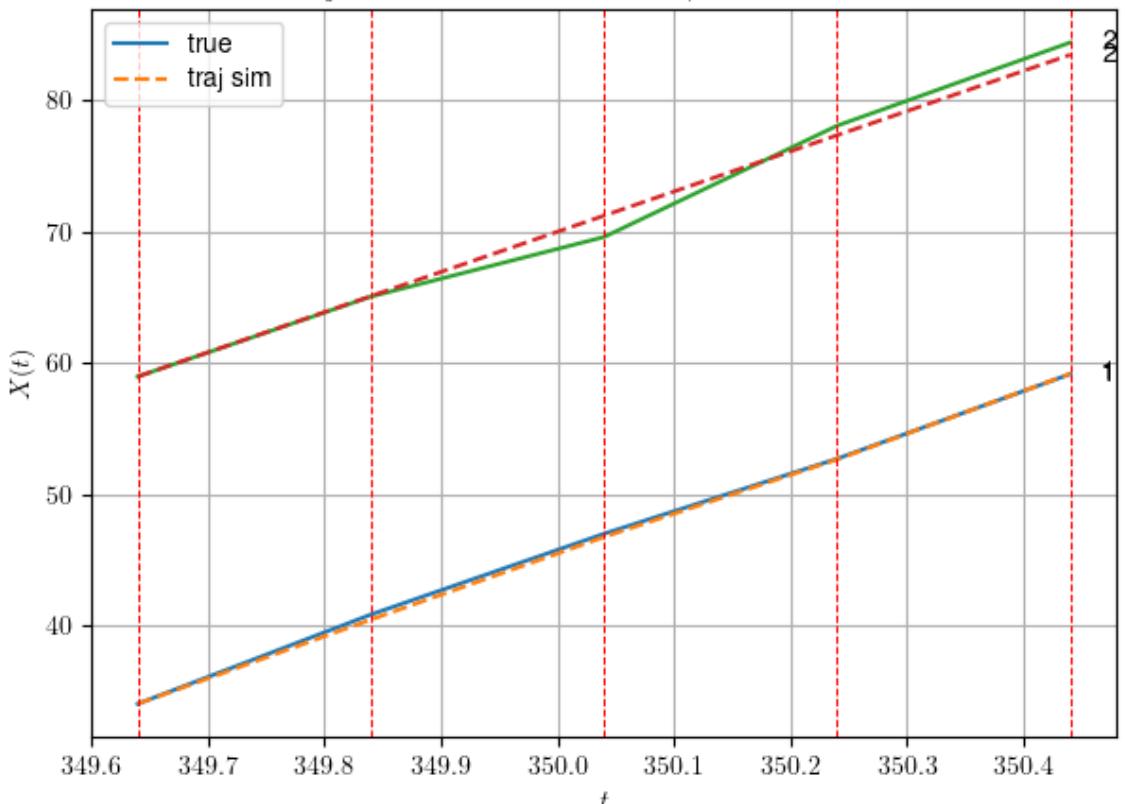
```
- Time interval n.3: [350.24, 350.44]
```

```
* y_true: [32.28190572]
```

```
* v_ann: [32.634765625, 30.663808885196527]
```

```
* err= 0.4263681604957007
* Learning rate NN = 2.3914839403005317e-05
* diff = 7.815876182259984e-06
```

df n. 1 – Scene n. 48, at it = 500



For scene 48/109

```
* use LR_NN=5e-05 with err=0.5483997809696246 at it=24
* v0_scn_mean = 30.637256529793568
* MAE = 0.4260683892883946
```

df n.1, scene n.49/109

We have 3 time intervals inside [351.64,352.24]

```
- Time interval n.0: [351.64, 351.84]
```

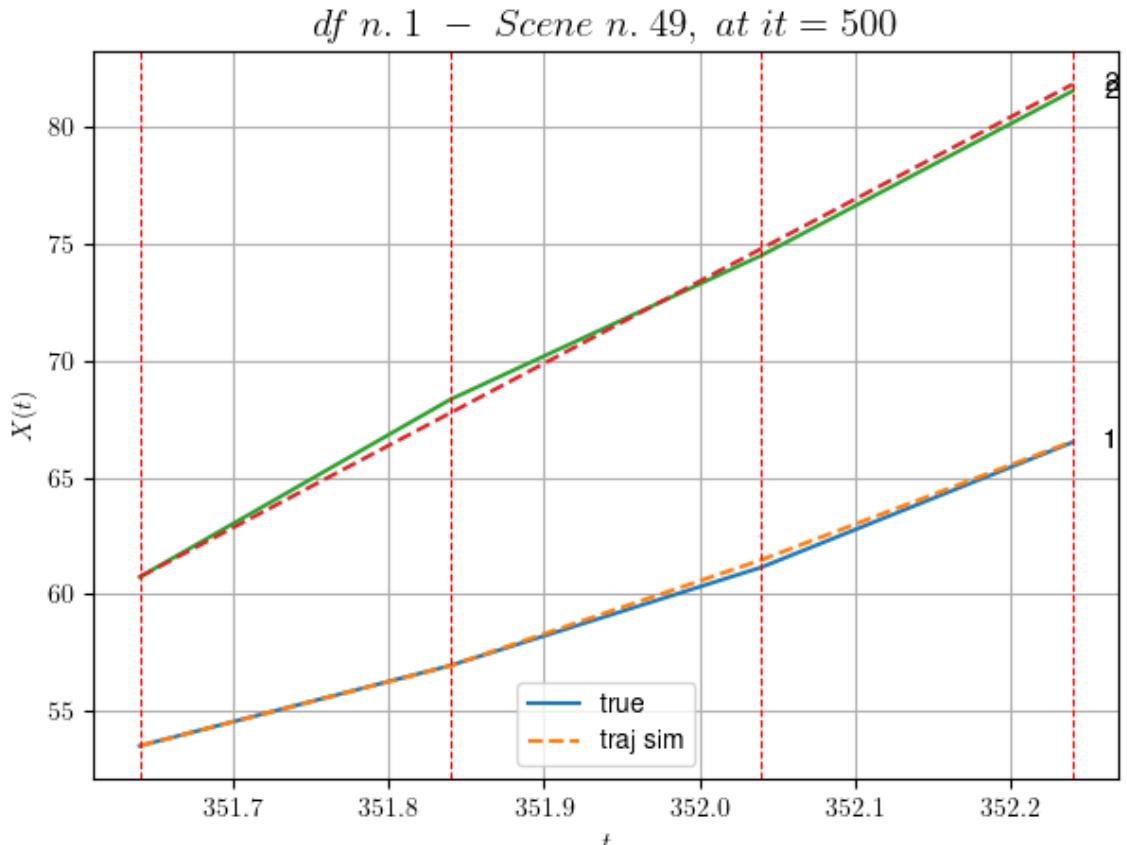
```
* y_true: [17.20102191]
```

```
* v_ann: [17.1479434967041, 35.128237730719775]
```

- Time interval n.1: [351.84, 352.04]
 - * y_true: [21.01146522]
 - * v_ann: [22.648637771606445, 35.128237730719775]

- Time interval n.2: [352.04, 352.24]
 - * y_true: [26.72713019]
 - * v_ann: [25.32803726196289, 35.128237730719775]

- * err= 0.07471856407402937
- * Learning rate NN = 0.0002952449722215533
- * diff = 4.177807100173847e-05



For scene 49/109

- * use LR_NN=0.0005 with err=1.714760845773447 at it=24
- * v0_scn_mean = 34.92310822153167
- * MAE = 0.07457291987964629

df n.1, scene n.50/109

We have 5 time intervals inside [352.84,353.84]

- Time interval n.0: [352.84, 353.04]
 - * y_true: [30.00089881]
 - * v_ann: [23.48947525024414, 29.02856357779746]

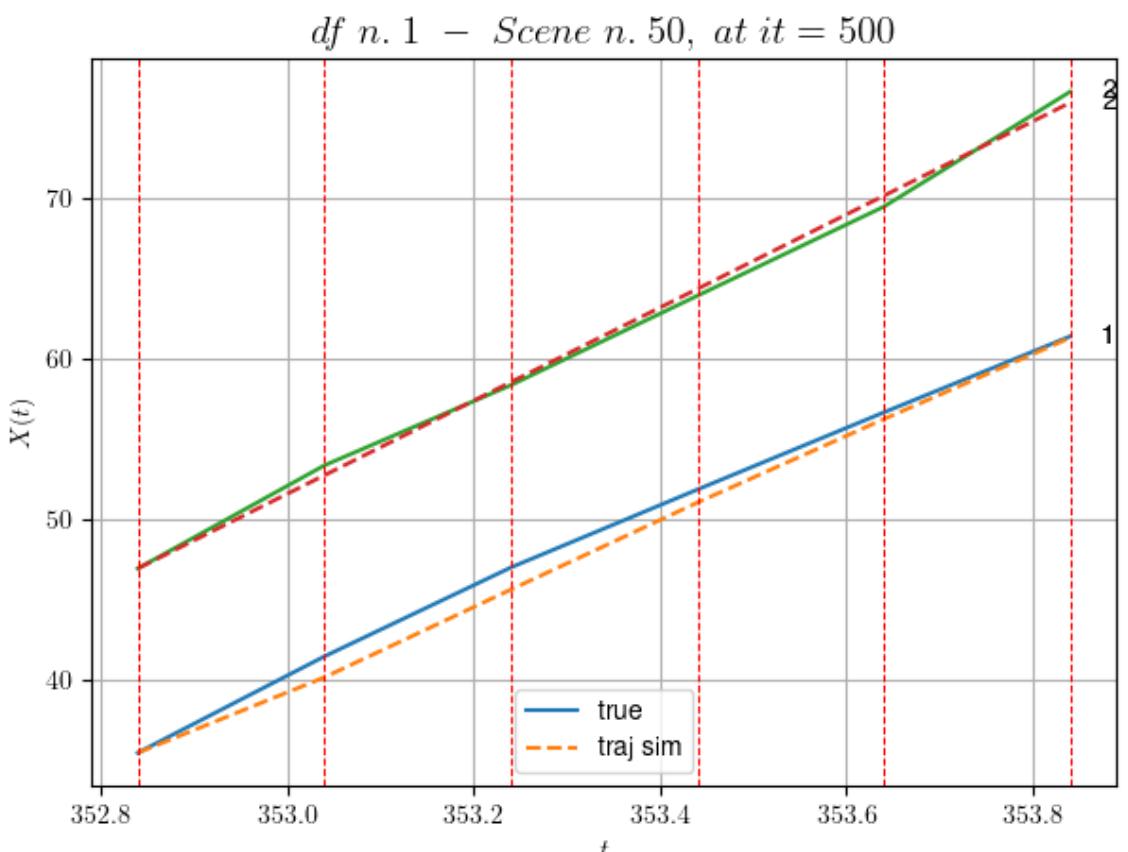
- Time interval n.1: [353.04, 353.24]
 * y_true: [27.71101029]
 * v_ann: [27.33298683166504, 29.02856357779746]

- Time interval n.2: [353.24, 353.44]
 * y_true: [24.27617752]
 * v_ann: [27.10938262939453, 29.02856357779746]

- Time interval n.3: [353.44, 353.64]
 * y_true: [24.04635791]
 * v_ann: [26.01423454284668, 29.02856357779746]

- Time interval n.4: [353.64, 353.84]
 * y_true: [23.7016285]
 * v_ann: [25.351280212402344, 29.02856357779746]

* err= 0.4968475485642916
 * Learning rate NN = 0.0003874204121530056
 * diff = 0.005188639231258896



For scene 50/109

* use LR_NN=0.001 with err=0.7769709599040322 at it=24
 * v0_scn_mean = 29.06742103467776
 * MAE = 0.4915143365233412

```
=====
=====
```

df n.1, scene n.51/109

```
=====
=====
```

We have 4 time intervals inside [358.84,359.64]

- Time interval n.0: [358.84, 359.04]
 - * y_true: [31.9907758]
 - * v_ann: [34.221702575683594, 28.62644197691982]

```
-----
```

- Time interval n.1: [359.04, 359.24]
 - * y_true: [34.35123345]
 - * v_ann: [33.073394775390625, 28.62644197691982]

```
-----
```

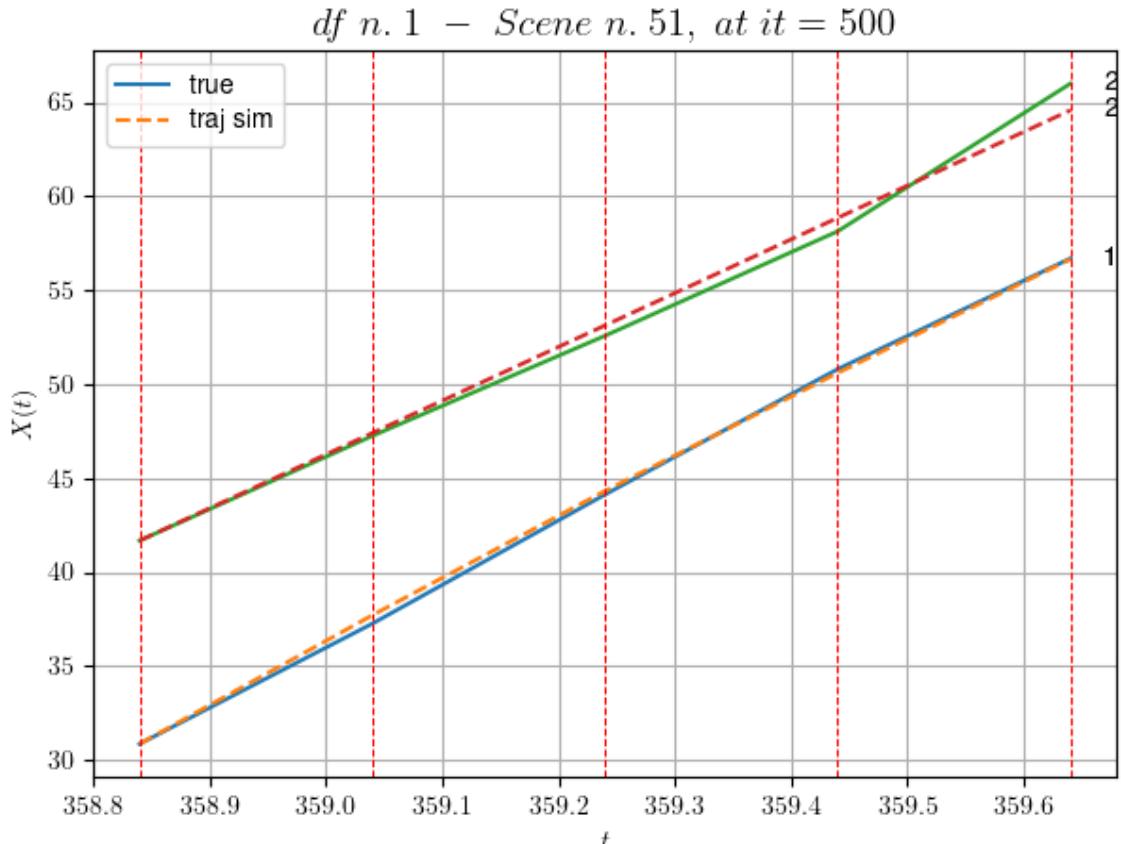
- Time interval n.2: [359.24, 359.44]
 - * y_true: [33.37134022]
 - * v_ann: [31.40082359313965, 28.62644197691982]

```
-----
```

- Time interval n.3: [359.44, 359.64]
 - * y_true: [29.4517673]
 - * v_ann: [30.22681999206543, 28.62644197691982]

```
-----
```

- * err= 0.313422372329075
- * Learning rate NN = 4.7829678806010634e-05
- * dfff = 0.0001760020100201002

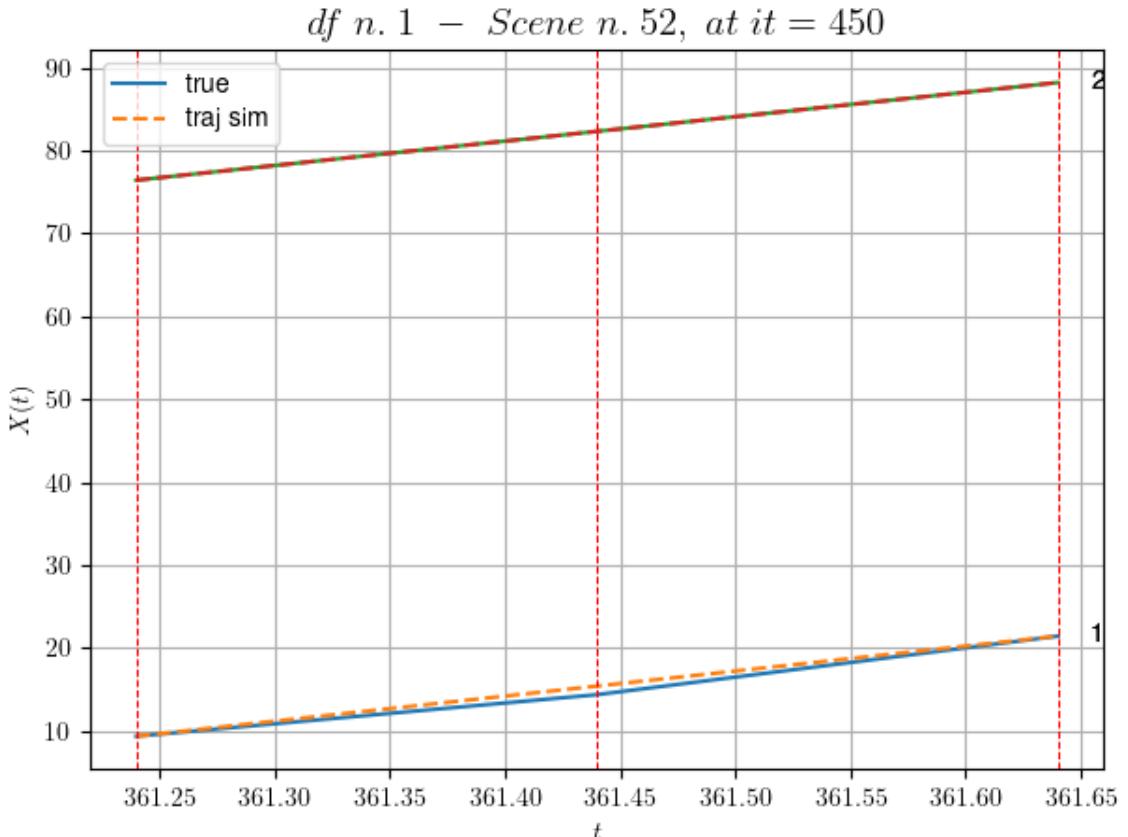


For scene 51/109

* use LR_NN=0.0001 with err=0.7292204781333437 at it=24
* v0_scn_mean = 28.681384297832732
* MAE = 0.3084194924704565

df n.1, scene n.52/109

We have 2 time intervals inside [361.24, 361.64]
* err= 0.17888203964001584
* Learning rate NN = 7.289998848136747e-06
* diff = 9.784139664015257e-07



For scene 52/109

- * use LR_NN=1e-05 with err=0.1808771655155399 at it=24
- * v0_scn_mean = 29.478133757120343
- * MAE = 0.17722492510012552

df n.1, scene n.53/109

We have 6 time intervals inside [362.84, 364.04]

- Time interval n.0: [362.84, 363.04]
 - * y_true: [59.17020934]
 - * v_ann: [34.637081146240234, 30.313976428342094]

- Time interval n.1: [363.04, 363.24]
 - * y_true: [26.94023047]
 - * v_ann: [35.438575744628906, 30.313976428342094]

- Time interval n.2: [363.24, 363.44]
 - * y_true: [23.39031489]
 - * v_ann: [33.73963928222656, 30.313976428342094]

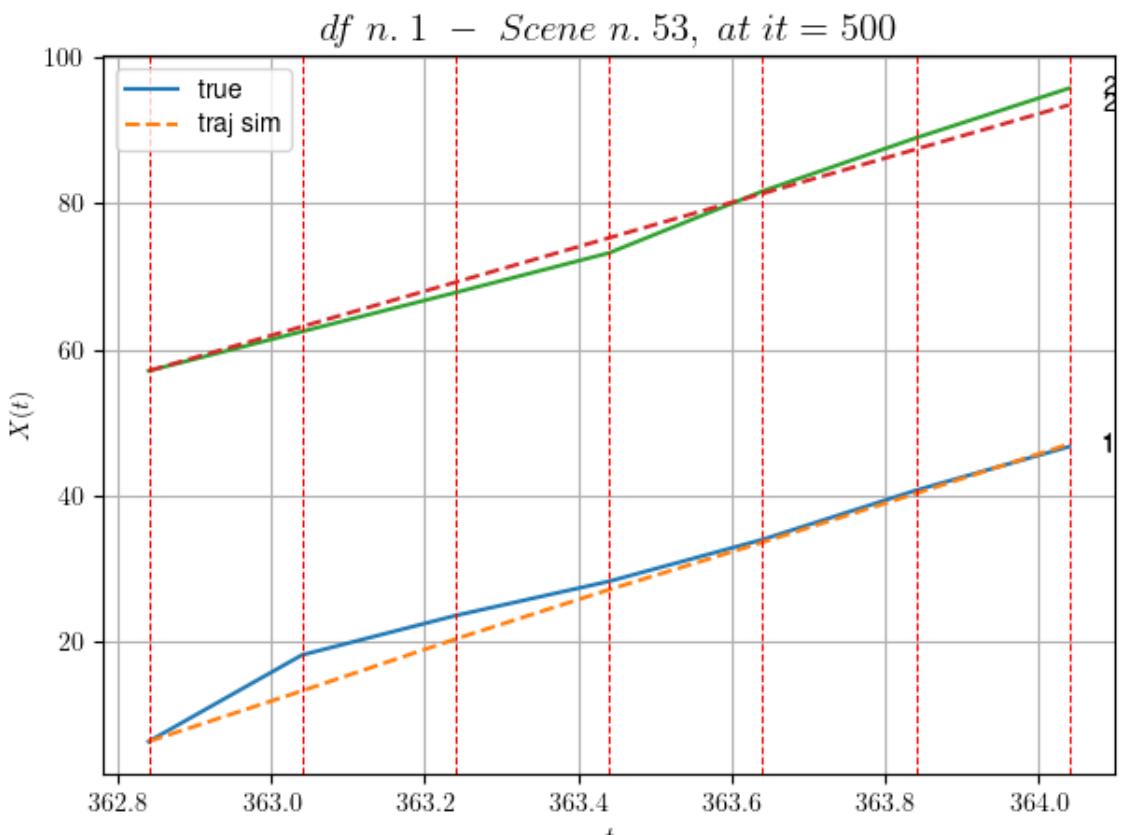
- Time interval n.3: [363.44, 363.64]
 - * y_true: [28.55056389]

```
* v_ann: [32.320838928222656, 30.313976428342094]
```

```
- Time interval n.4: [363.64, 363.84]
* y_true: [33.66093634]
* v_ann: [33.429344177246094, 30.313976428342094]
```

```
- Time interval n.5: [363.84, 364.04]
* y_true: [29.94110461]
* v_ann: [33.839080810546875, 30.313976428342094]
```

```
* err= 3.6086079437313257
* Learning rate NN = 3.138104875688441e-05
* diff = 0.00434060389972446
```



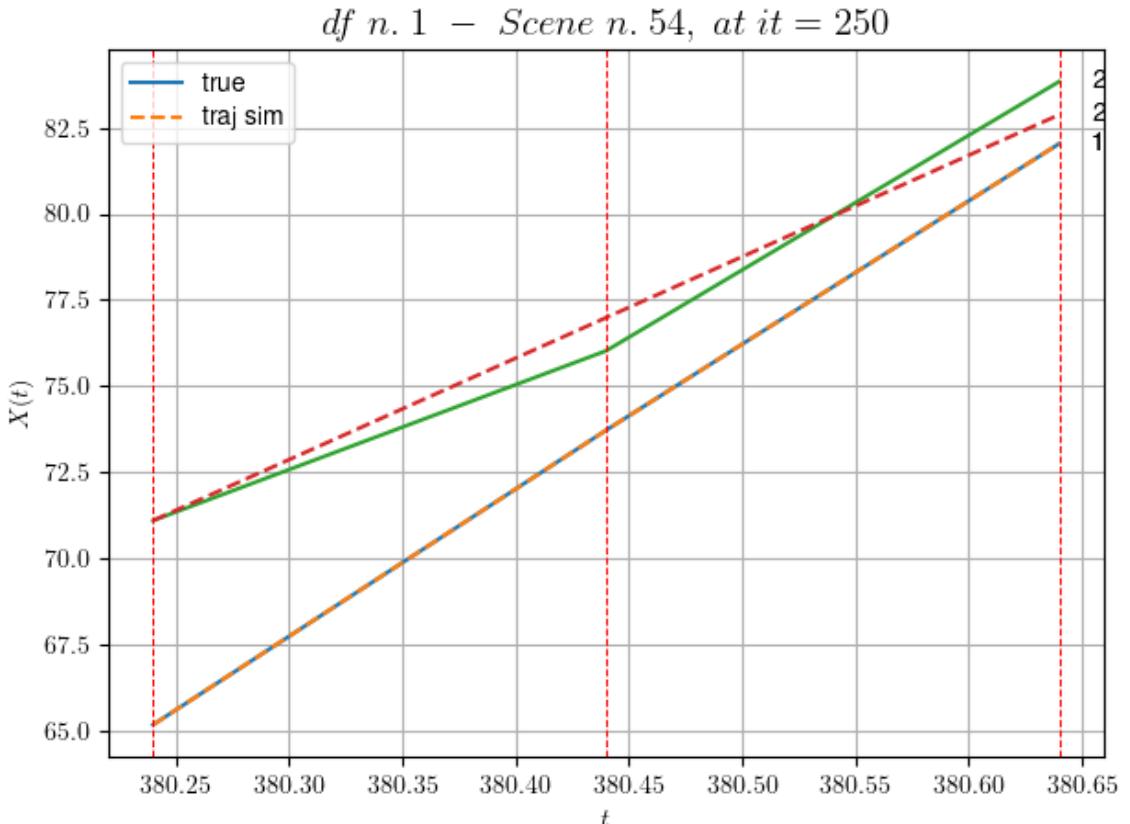
For scene 53/109

```
* use LR_NN=0.0001 with err=3.437001225806007 at it=24
* v0_scn_mean = 30.30141737121047
* MAE = 3.338740513464507
```

df n.1, scene n.54/109

We have 2 time intervals inside [380.24,380.64]
* err= 0.30896254942799106

* Learning rate NN = 0.0004500000213738531
 * diff = 7 8300576601756680.07



For scene 54/109

* use LR_NN=0.0005 with err=1.6889992739180846 at it=24
 * v0_scn_mean = 29.485928043535196
 * MAE = 0.3089500130863587

df n.1, scene n.55/109

We have 5 time intervals inside [385.04, 386.04]

- Time interval n.0: [385.04, 385.24]
 - * y_true: [29.06003834]
 - * v_ann: [28.32200050354004, 36.00289770478513]

- Time interval n.1: [385.24, 385.44]
 - * y_true: [28.54010433]
 - * v_ann: [29.524253845214844, 36.00289770478513]

- Time interval n.2: [385.44, 385.64]
 - * y_true: [26.16018293]
 - * v_ann: [31.25447654724121, 36.00289770478513]

- Time interval n.3: [385.64, 385.84]

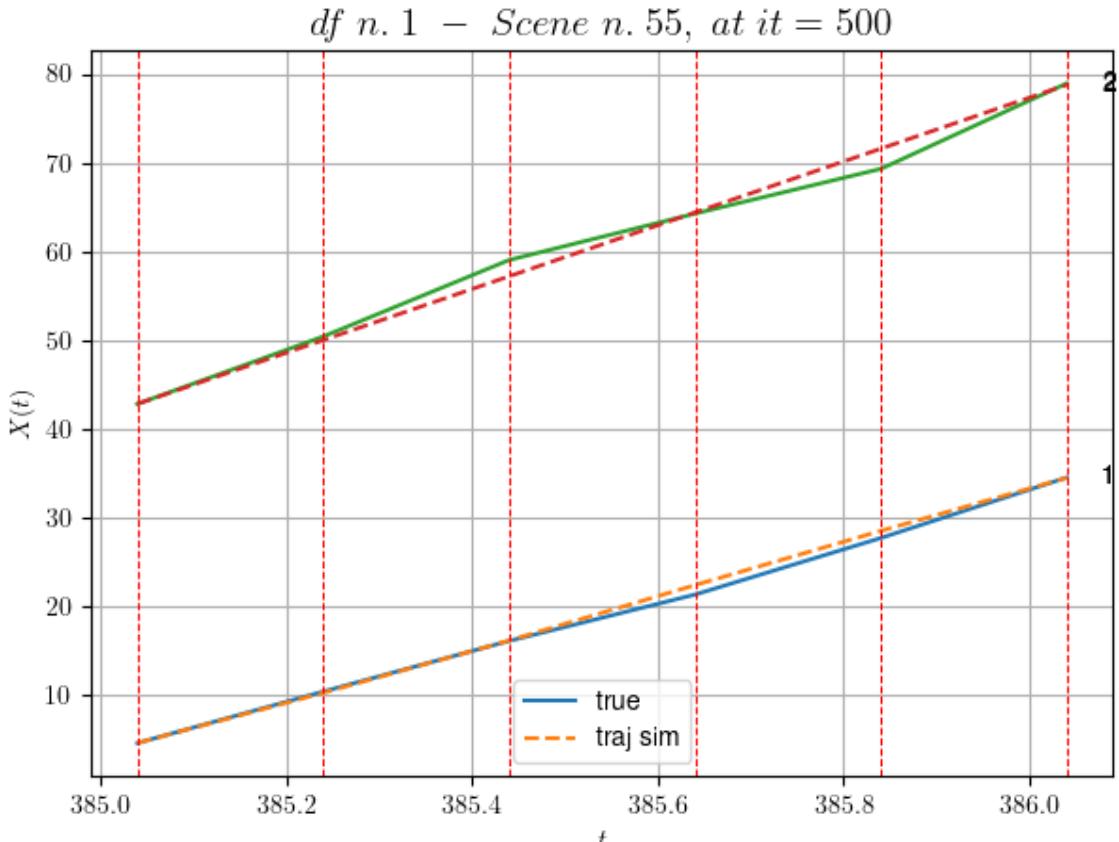
```
* y_true: [31.92038858]
* v_ann: [30.607940673828125, 36.00289770478513]
```

```
- Time interval n.4: [385.84, 386.04]
```

```
* y_true: [34.1406537]
```

```
* v_ann: [29.94505500793457, 36.00289770478513]
```

```
* err= 0.8820437700928571
* Learning rate NN = 1.9371018424862996e-05
* diff = 0.0035668838381167634
```



For scene 55/109

```
* use LR_NN=5e-05 with err=6.597368381479942 at it=24
* v0_scn_mean = 35.76278179663948
* MAE = 0.8774874336039187
```

df n.1, scene n.56/109

We have 2 time intervals inside [393.84, 394.24]

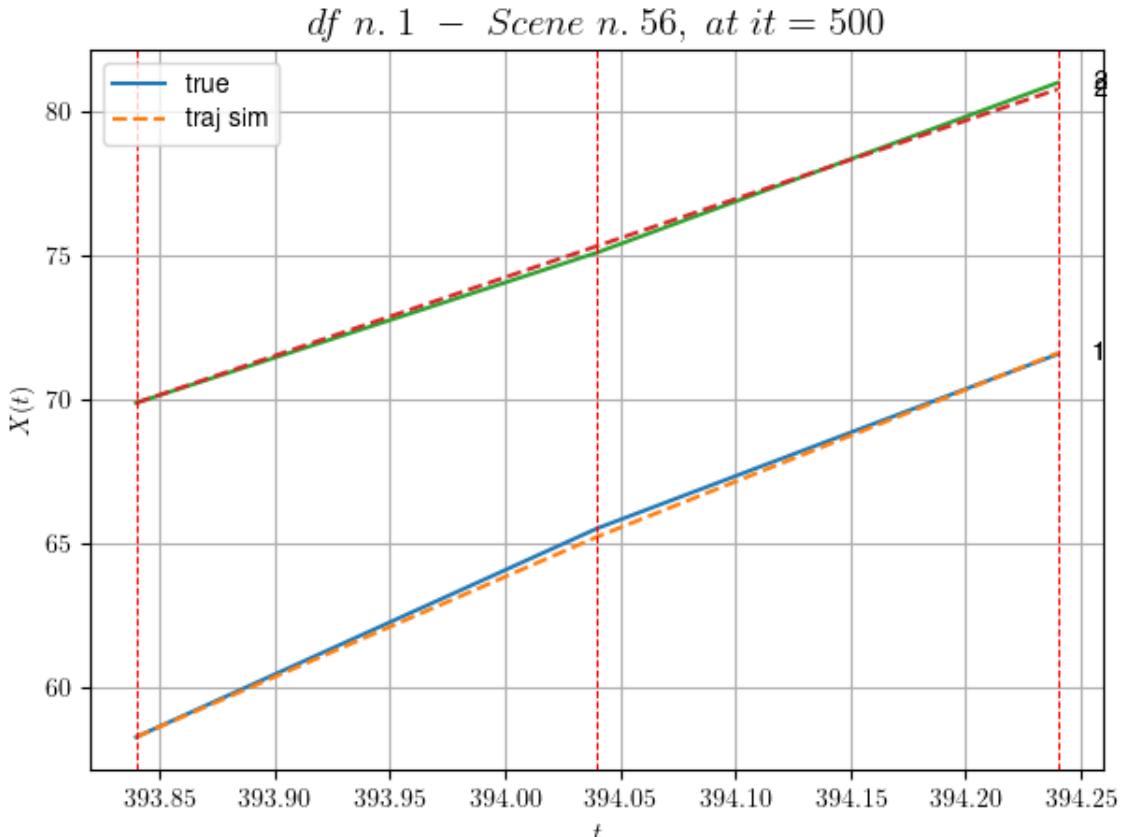
```
- Time interval n.0: [393.84, 394.04]
```

```
* y_true: [36.27268123]
```

```
* v_ann: [34.81557083129883, 27.269624216530584]
```

```
- Time interval n.1: [394.04, 394.24]
  * y_true: [30.30786624]
  * v_ann: [31.96032333740234, 27.269624216530584]
```

```
* err= 0.03164507029370845
* Learning rate NN = 0.00036449998151510954
* diff = 0.0009504636765814006
```



For scene 56/109

```
* use LR_NN=0.0005 with err=0.22559234130757272 at it=24
* v0_scn_mean = 27.378839247849303
* MAE = 0.03164507029370845
```

df n.1, scene n.57/109

We have 4 time intervals inside [402.04,402.84]

```
- Time interval n.0: [402.04, 402.24]
  * y_true: [38.60215299]
  * v_ann: [40.243343353271484, 31.00675921223655]
```

```
- Time interval n.1: [402.24, 402.44]
  * y_true: [38.60215299]
  * v_ann: [35.75714111328125, 31.00675921223655]
```

```

-----  

- Time interval n.2: [402.44, 402.64]  

* y_true: [32.70290702]  

* v_ann: [32.435543060302734, 31.00675921223655]
-----
```

```

-----  

- Time interval n.3: [402.64, 402.84]  

* y_true: [32.70290702]  

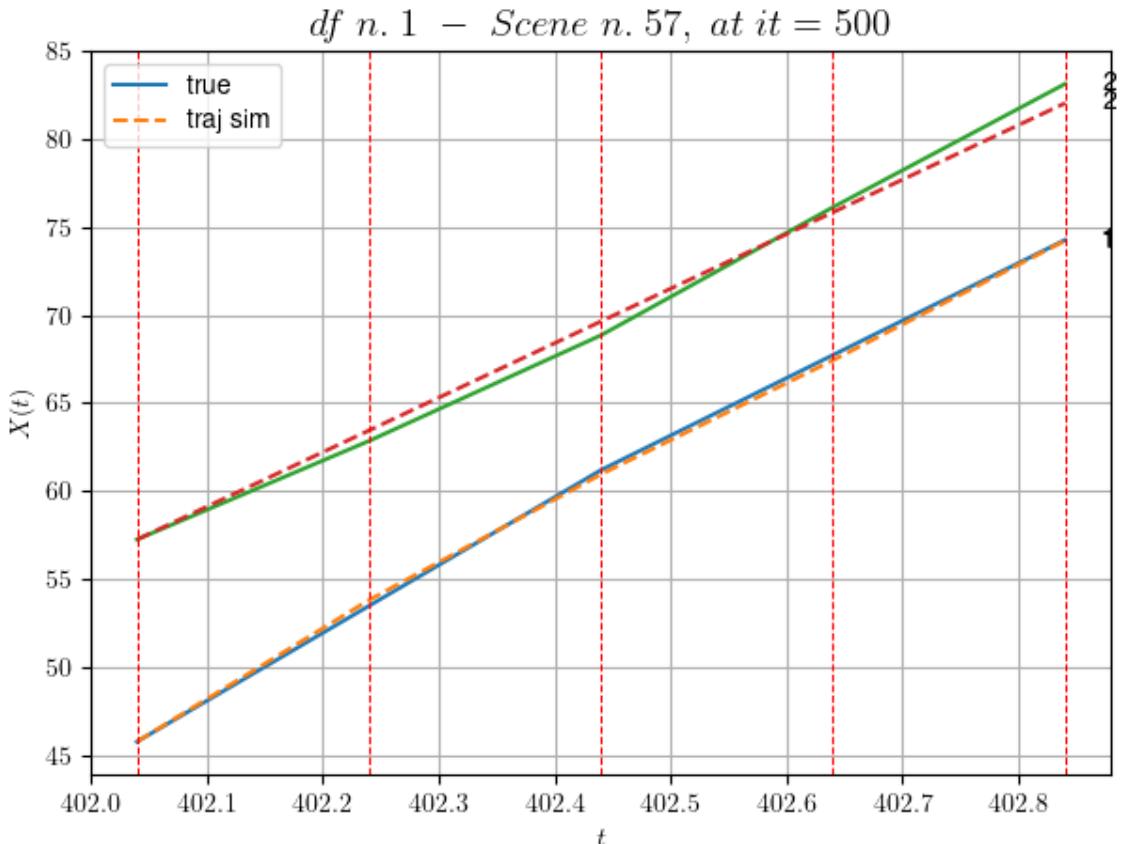
* v_ann: [33.96305465698242, 31.00675921223655]
-----
```

```

* err= 0.25216724489815445  

* Learning rate NN = 4.7829678806010634e-05  

* diff = 7 965067772197632e-05
```



For scene 57/109

```

* use LR_NN=0.0001 with err=0.6241602036278571 at it=24
* v0_scn_mean = 30.966488843754362
* MAE = 0.25216724489815445
=====
```

df n.1, scene n.58/109

```

=====  

We have 5 time intervals inside [403.64,404.64]  

- Time interval n.0: [403.64, 403.84]  

* y_true: [27.97561343]  

* v_ann: [-4.9430178478360176e-05, 32.5797828532661
```

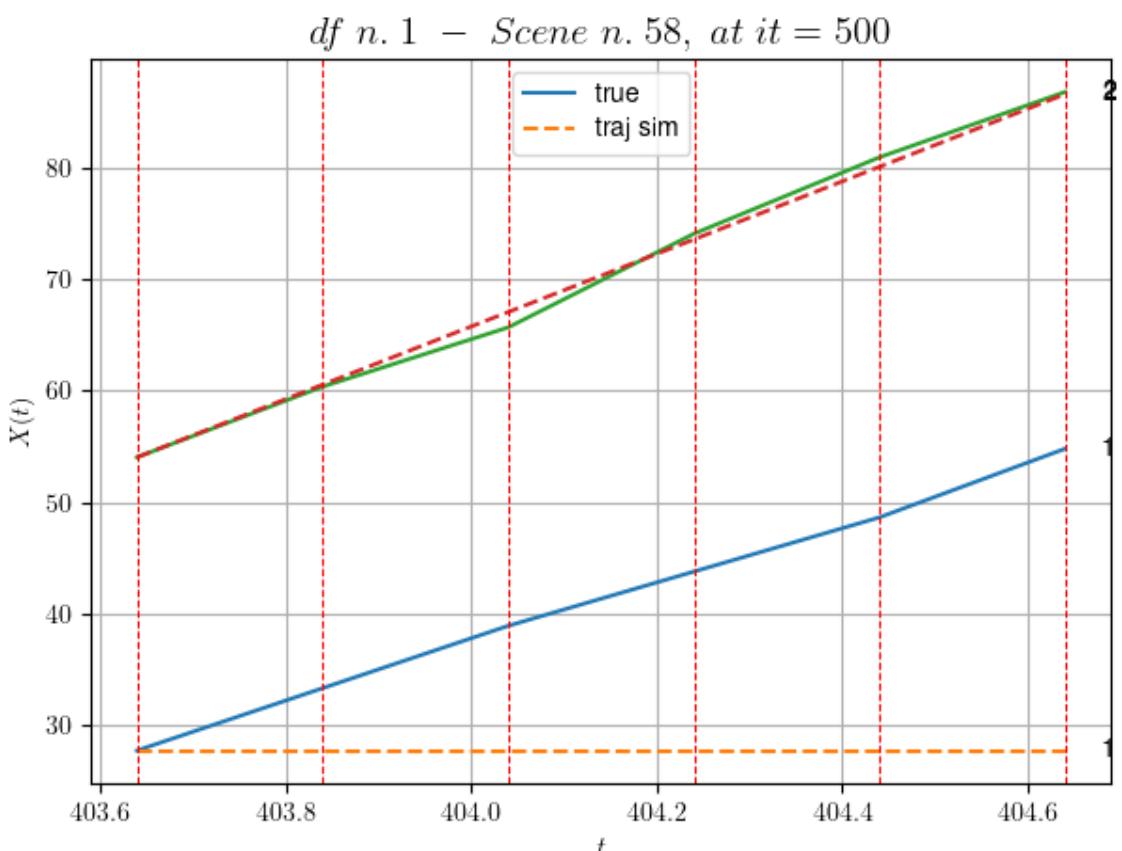
```
- Time interval n.1: [403.84, 404.04]
* y_true: [27.97561343]
* v_ann: [-3.690287485369481e-05, 32.5797828532661
6]

- Time interval n.2: [404.04, 404.24]
* y_true: [24.32591098]
* v_ann: [-4.115155024919659e-05, 32.5797828532661
6]

- Time interval n.3: [404.24, 404.44]
* y_true: [24.32591098]
* v_ann: [-1.0061819921247661e-05, 32.5797828532661
6]

- Time interval n.4: [404.44, 404.64]
* y_true: [30.80180131]
* v_ann: [-4.520597940427251e-06, 32.5797828532661
6]

* err= 132.35969870012363
* Learning rate NN = 0.0001937102060765028
* diff = 2 1051453444442814e-05
```



```
For scene 58/109
* use LR_NN=0.0005 with err=1.9136866552940202 at it=24
* v0_scn_mean = 32.476591539154576
* MAE = 26.596215895767372
```

```
=====
=====
```

```
df n.1, scene n.59/109
```

```
=====
=====
```

```
We have 5 time intervals inside [411.64,412.64]
```

```
- Time interval n.0: [411.64, 411.84]
  * y_true: [28.51083931]
  * v_ann: [32.879703521728516, 35.8529411171122]
```

```
-----
-----
```

```
- Time interval n.1: [411.84, 412.04]
  * y_true: [38.00152248]
  * v_ann: [32.653892517089844, 35.8529411171122]
```

```
-----
-----
```

```
- Time interval n.2: [412.04, 412.24]
  * y_true: [32.76167763]
  * v_ann: [34.62297058105469, 35.8529411171122]
```

```
-----
-----
```

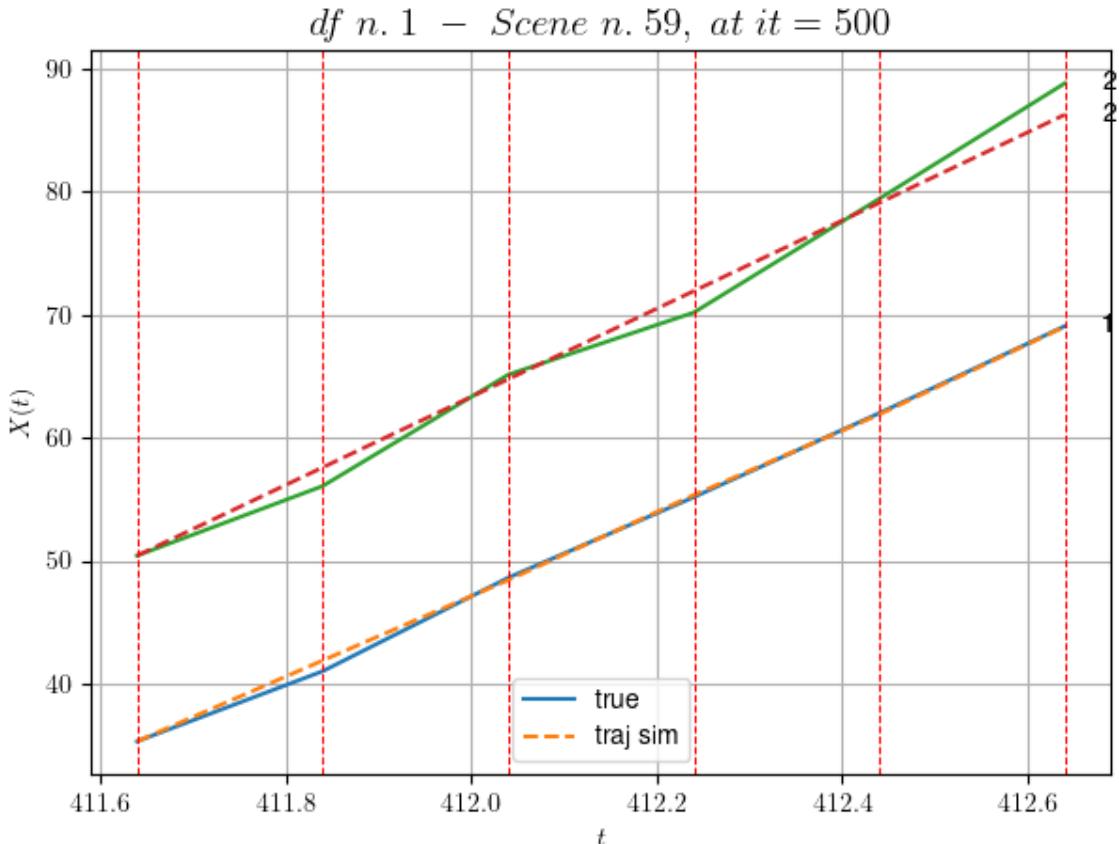
```
- Time interval n.3: [412.24, 412.44]
  * y_true: [34.16232332]
  * v_ann: [32.73137283325195, 35.8529411171122]
```

```
-----
-----
```

```
- Time interval n.4: [412.44, 412.64]
  * y_true: [35.38292867]
  * v_ann: [35.71819305419922, 35.8529411171122]
```

```
-----
-----
```

```
* err= 1.0811158495507425
* Learning rate NN = 1.9371018424862996e-05
* diff = 0.00014388111387675373
```



For scene 59/109

```
* use LR_NN=5e-05 with err=8.965819839355587 at it=24
* v0_scn_mean = 35.61882347247268
* MAE = 1.0811065019958441
```

df n.1, scene n.60/109

We have 3 time intervals inside [429.24, 429.84]

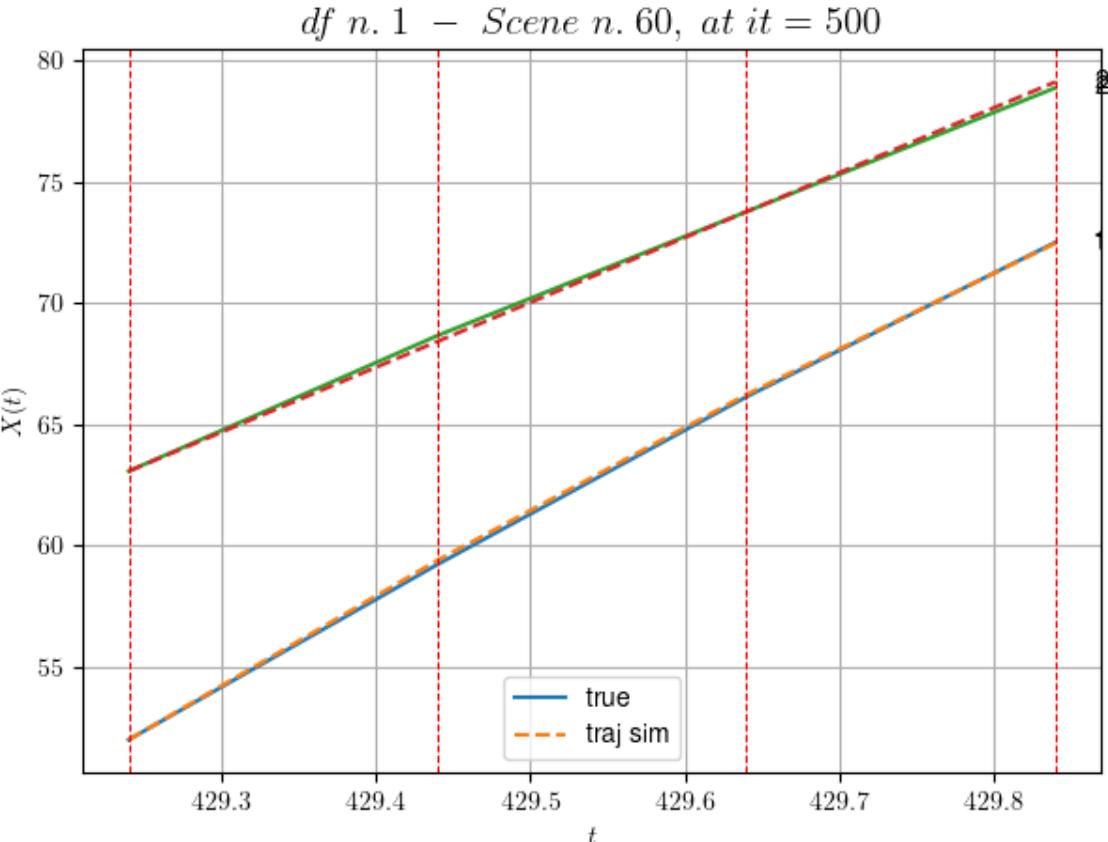
- Time interval n.0: [429.24, 429.44]
 - * y_true: [36.17723915]
 - * v_ann: [37.02414321899414, 26.764923514729844]

- Time interval n.1: [429.44, 429.64]
 - * y_true: [34.5674548]
 - * v_ann: [34.18787384033203, 26.764923514729844]

- Time interval n.2: [429.64, 429.84]
 - * y_true: [31.87296901]
 - * v_ann: [31.207870483398438, 26.764923514729844]

- * err= 0.019568884018627882
- * Learning rate NN = 5.904899080633186e-05

* diff = 0.0001877740049800597



For scene 60/109

* use LR_NN=0.0001 with err=0.929355902222052 at it=24
 * v0_scn_mean = 26.89432657411572
 * MAE = 0.019568884018627882

df n.1, scene n.61/109

We have 6 time intervals inside [431.04, 432.24]

- Time interval n.0: [431.04, 431.24]
 - * y_true: [29.15044808]
 - * v_ann: [30.286121368408203, 27.914827173163417]

- Time interval n.1: [431.24, 431.44]
 - * y_true: [31.45067763]
 - * v_ann: [29.904598236083984, 27.914827173163417]

- Time interval n.2: [431.44, 431.64]
 - * y_true: [27.86084986]
 - * v_ann: [29.569114685058594, 27.914827173163417]

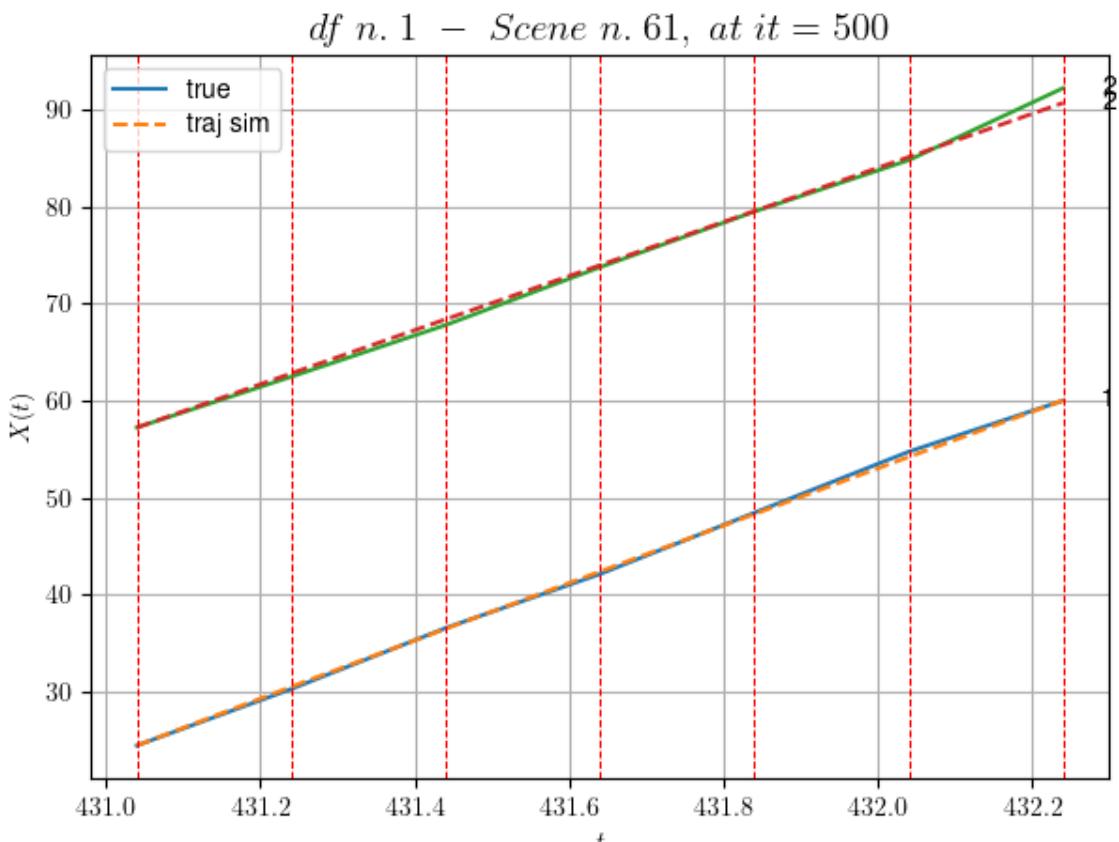
- Time interval n.3: [431.64, 431.84]

```
* y_true: [31.63128236]
* v_ann: [29.622920989990234, 27.914827173163417]
```

```
- Time interval n.4: [431.84, 432.04]
* y_true: [31.49166882]
* v_ann: [29.501325607299805, 27.914827173163417]
```

```
- Time interval n.5: [432.04, 432.24]
* y_true: [26.376716]
* v_ann: [29.171390533447266, 27.914827173163417]
```

```
* err= 0.24216954464270052
* Learning rate NN = 1.5690524378442205e-05
* diff = 0.00037835923494577983
```



For scene 61/109

```
* use LR_NN=5e-05 with err=1.0717011987576146 at it=24
* v0_scn_mean = 27.998234086220677
* MAE = 0.22736942825672535
```

df n.1, scene n.62/109

We have 5 time intervals inside [444.24, 445.24]

- Time interval n.0: [444.24, 444.44]
* y_true: [24.85115092]
* v_ann: [21.88313865661621, 28.494973095574913]

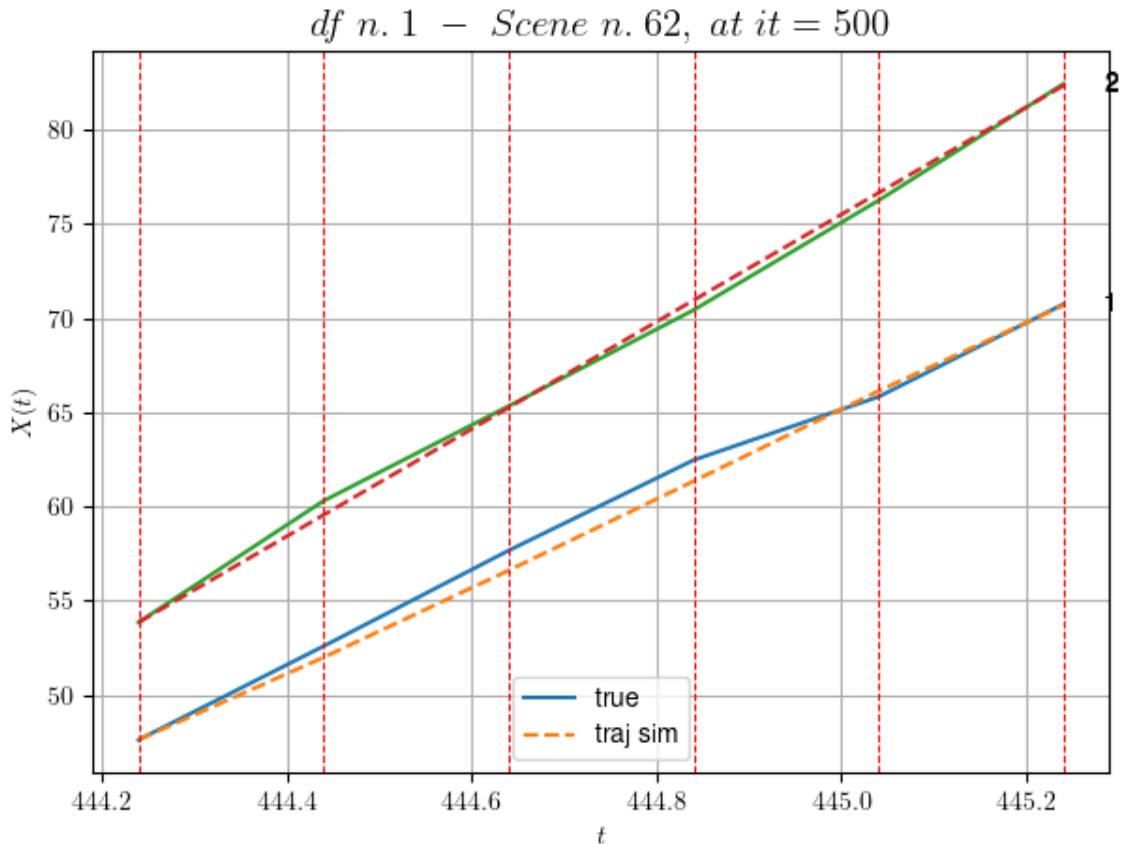
- Time interval n.1: [444.44, 444.64]
* y_true: [25.38154149]
* v_ann: [23.065086364746094, 28.494973095574913]

- Time interval n.2: [444.64, 444.84]
* y_true: [24.02164141]
* v_ann: [23.69791603088379, 28.494973095574913]

- Time interval n.3: [444.84, 445.04]
* y_true: [16.80133324]
* v_ann: [23.931827545166016, 28.494973095574913]

- Time interval n.4: [445.04, 445.24]
* y_true: [24.59226228]
* v_ann: [22.75002098083496, 28.494973095574913]

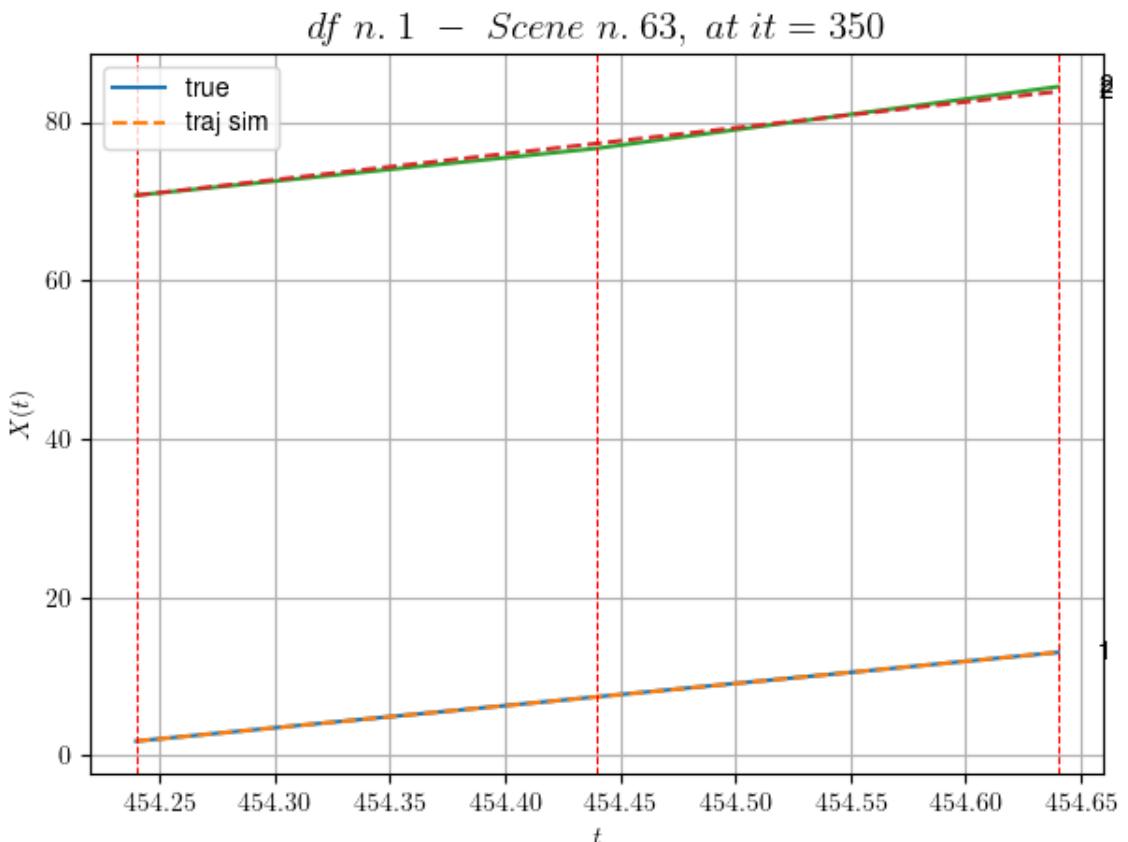
* err= 0.31923049841821644
* Learning rate NN = 0.0003874204121530056
* diff = 0.007661512446389351



```
For scene 62/109
* use LR_NN=0.001 with err=2.076211667909443 at it=24
* v0_scn_mean = 28.555174171741186
* MAE = 0.31923049841821644
```

```
df n.1, scene n.63/109
```

```
We have 2 time intervals inside [454.24,454.64]
* err= 0.12847021122310365
* Learning rate NN = 4.049999552080408e-05
* diff = 2.3925759567999805e-08
```



```
For scene 63/109
* use LR_NN=5e-05 with err=0.49823943538381205 at it=24
* v0_scn_mean = 32.60897616760761
* MAE = 0.12847021122310365
```

```
df n.1, scene n.64/109
```

```
We have 3 time intervals inside [456.24,456.84]
- Time interval n.0: [456.24, 456.44]
  * y_true: [27.10074139]
  * v_ann: [25.66667366027832, 29.144063618158874]
```

```

-----  

- Time interval n.1: [456.44, 456.64]  

* y_true: [22.25077732]  

* v_ann: [26.27677345275879, 29.144063618158874]
-----
```

```

-----  

- Time interval n.2: [456.64, 456.84]  

* y_true: [28.55124928]  

* v_ann: [25.925018310546875, 29.144063618158874]
-----
```

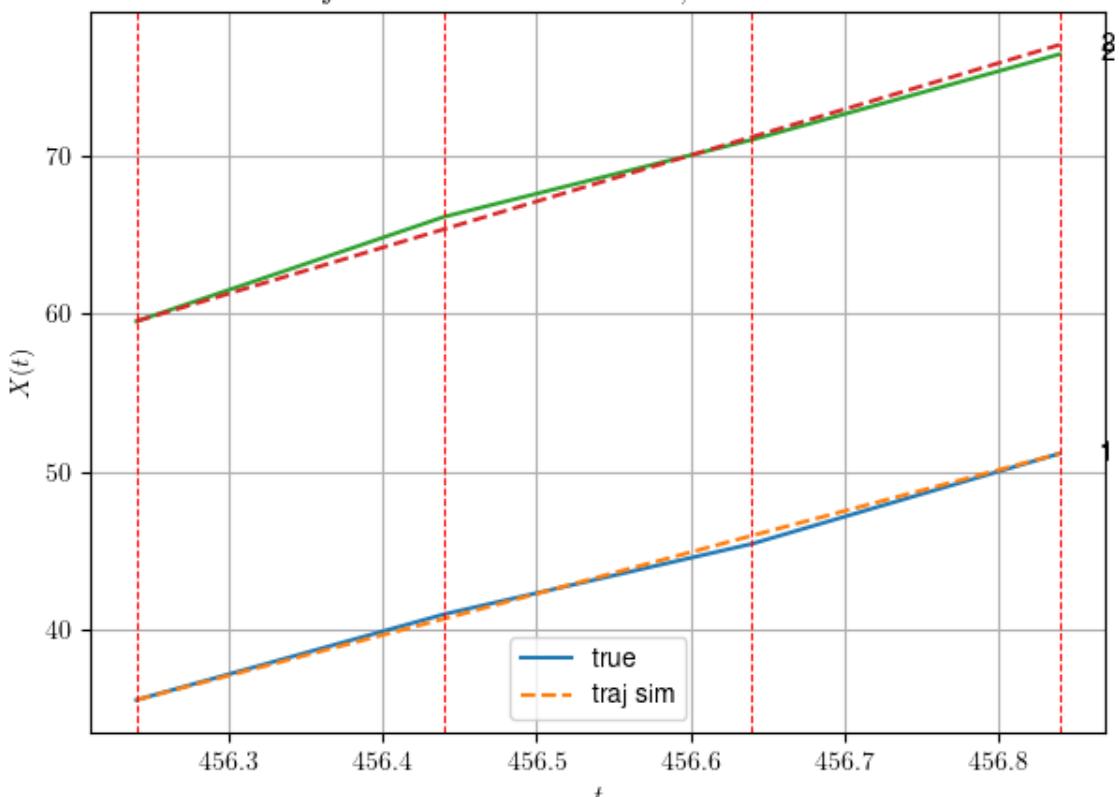
```

* err= 0.16858396381924284  

* Learning rate NN = 2.952449540316593e-05  

* diff = 0.820710005215056e-06
```

df n. 1 – Scene n. 64, at it = 500



```

For scene 64/109
* use LR_NN=5e-05 with err=0.28204864210046054 at it=24
* v0_scn_mean = 29.178301073426297
* MAE = 0.16834458727050033
=====
```

```
df n.1, scene n.65/109
=====
```

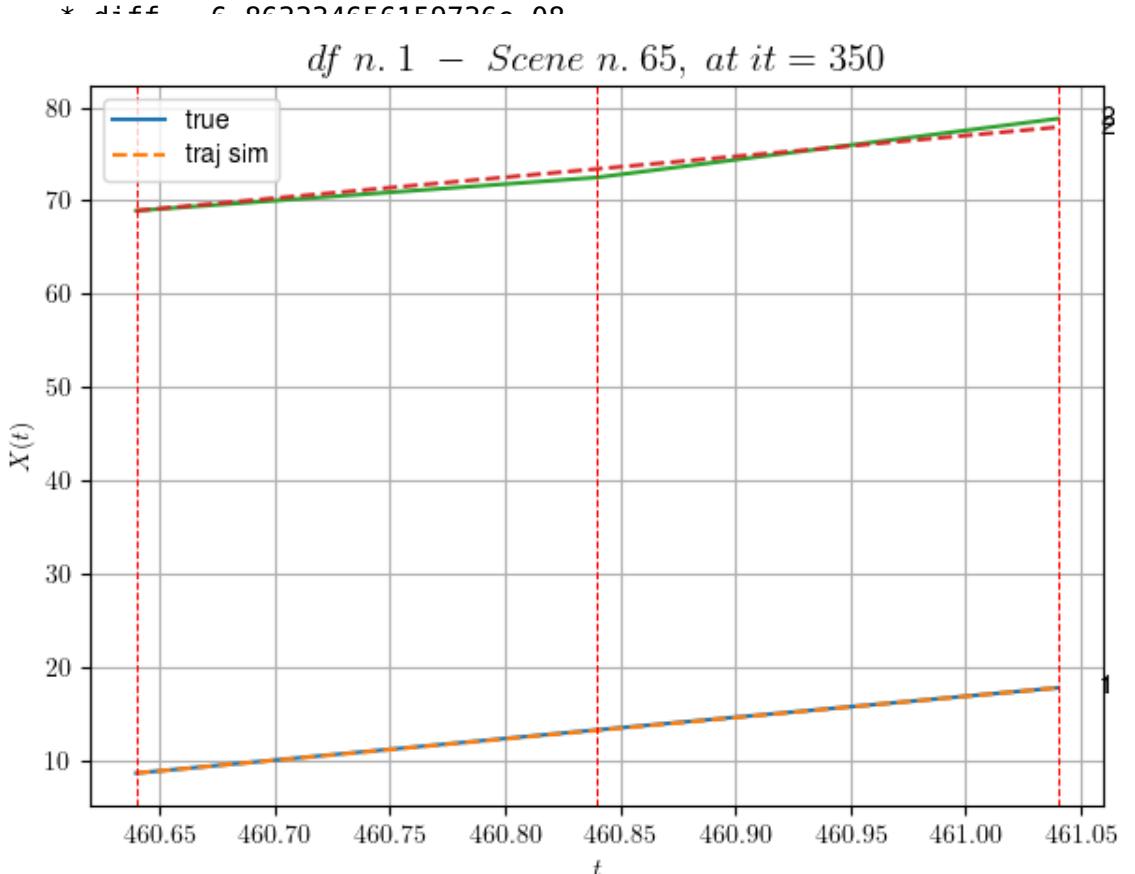
```

=====  

We have 2 time intervals inside [460.64,461.04]  

* err= 0.2789778350245836  

* Learning rate NN = 8.099998922261875e-06
```



For scene 65/109

```
* use LR_NN=1e-05 with err=1.744178081847374 at it=24  
* v0_scn_mean = 22.82707742347423  
* MAE = 0.2511515658262528
```

df n.1. scene n.66/109

We have 3 time intervals inside [463.04, 463.64]

- Time interval n.0: [463.04, 463.24]

* v true: [21.05099884]

* y_ann: [27.15400505065918, 19.662006047654298]

- Time interval n.1: [463.24, 463.44]

* v true: [28.1918149]

* v_ann: [25.613351821899414, 19.662006047654298]

- Time interval n.2: [463.44, 463.64]

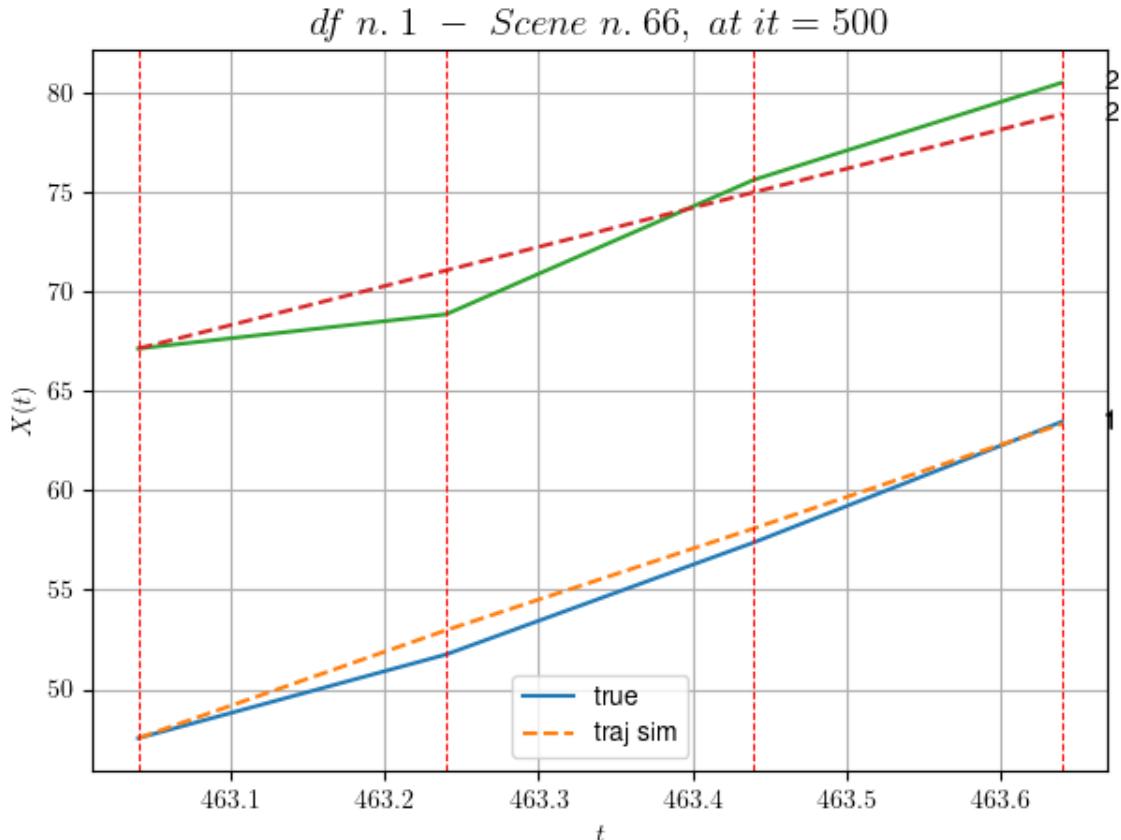
* v_true: [30.35202585]

* y_anno: [26.24932098388672, 19.662006047654298]

* err= 1.2210015052902476

* Learning rate NN = 2.952449540316593e-05

* diff = 0.00037150233705451896



For scene 66/109

* use LR_NN=5e-05 with err=6.8205922493595645 at it=24
 * v0_scn_mean = 20.075525805669027
 * MAE = 1.1095004758445195

df n.1, scene n.67/109

We have 5 time intervals inside [472.24, 473.24]

- Time interval n.0: [472.24, 472.44]
 - * y_true: [28.01055649]
 - * v_ann: [27.056148529052734, 22.764702156056497]

- Time interval n.1: [472.44, 472.64]
 - * y_true: [25.87069506]
 - * v_ann: [26.4761905670166, 22.764702156056497]

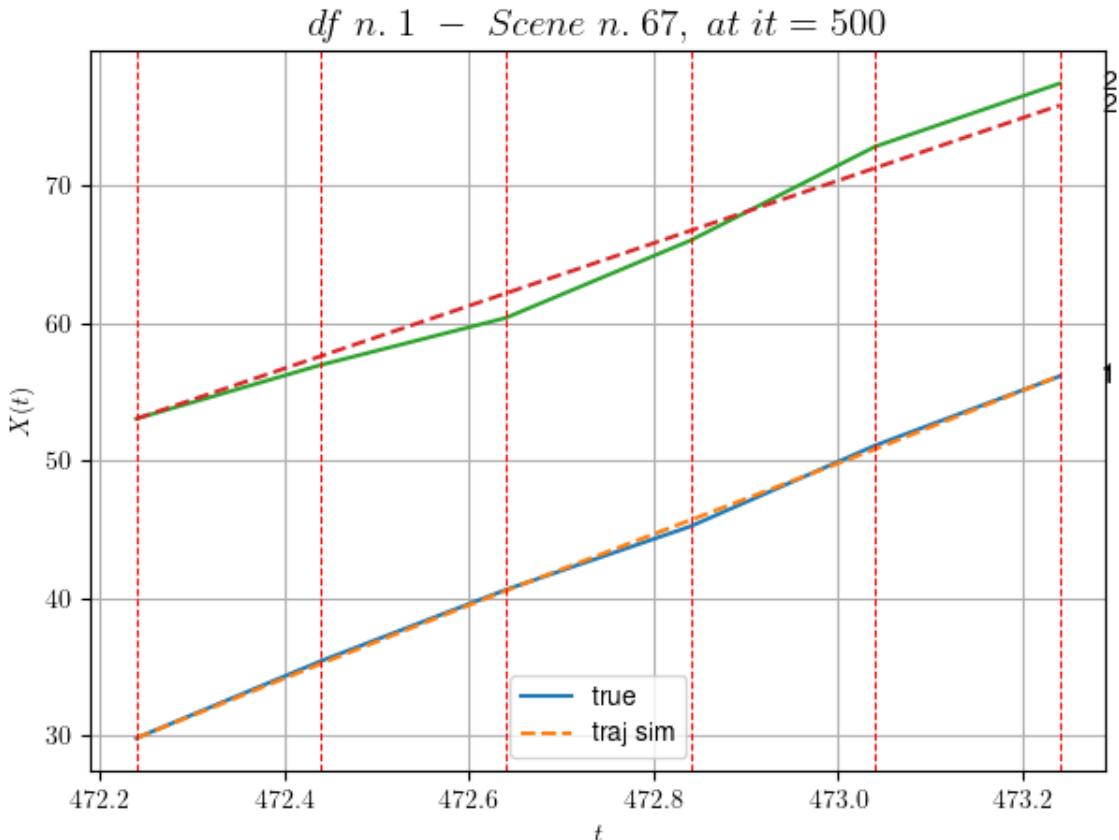
- Time interval n.2: [472.64, 472.84]
 - * y_true: [23.02078938]
 - * v_ann: [25.652877807617188, 22.764702156056497]

- Time interval n.3: [472.84, 473.04]

```
* y_true: [29.37129061]
* v_ann: [25.778732299804688, 22.764702156056497]
```

```
- Time interval n.4: [473.04, 473.24]
* y_true: [25.18134673]
* v_ann: [26.617507934570312, 22.764702156056497]
```

```
* err= 0.7799948901859368
* Learning rate NN = 3.874203684972599e-05
* diff = 0.00040710776926378145
```



For scene 67/109

```
* use LR_NN=0.0001 with err=8.506146904426293 at it=24
* v0_scn_mean = 23.05411406975914
* MAE = 0.6957386434466766
```

df n.1, scene n.68/109

We have 3 time intervals inside [474.84, 475.44]

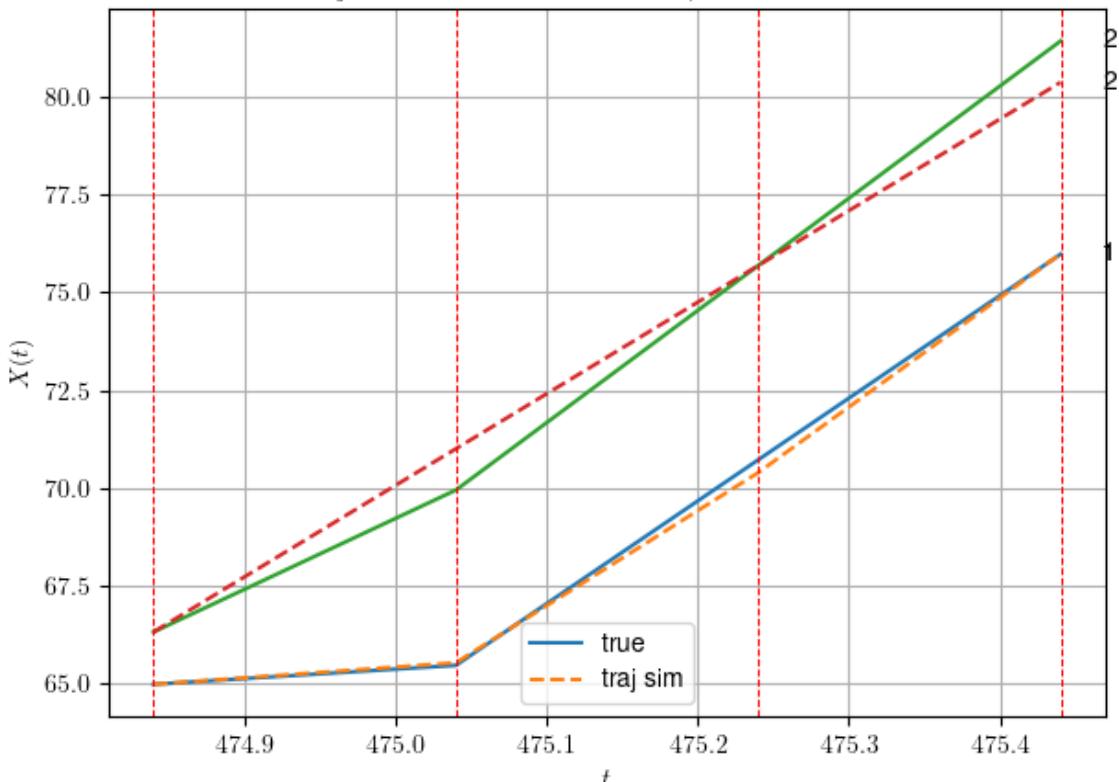
```
- Time interval n.0: [474.84, 475.04]
* y_true: [2.42235732]
* v_ann: [2.7579917907714844, 23.44488213400098]
```

- Time interval n.1: [475.04, 475.24]
 * y_true: [26.3025336]
 * v_ann: [24.327438354492188, 23.44488213400098]

- Time interval n.2: [475.24, 475.44]
 * y_true: [26.3025336]
 * v_ann: [27.978525161743164, 23.44488213400098]

* err= 0.29314219582043294
 * Learning rate NN = 0.0002952449722215533
 * diff = 5.396688576519981e-05

df n. 1 – Scene n. 68, at it = 500



For scene 68/109

* use LR_NN=0.0005 with err=2.749346433172396 at it=24
 * v0_scn_mean = 23.70708684859011
 * MAE = 0.29299345705108665

df n.1, scene n.69/109

We have 6 time intervals inside [479.24, 480.44]
 - Time interval n.0: [479.24, 479.44]
 * y_true: [25.80039081]
 * v_ann: [33.61693572998047, 18.356873791100377]

```
- Time interval n.1: [479.44, 479.64]
  * y_true: [32.03070589]
  * v_ann: [31.022226333618164, 18.356873791100377]

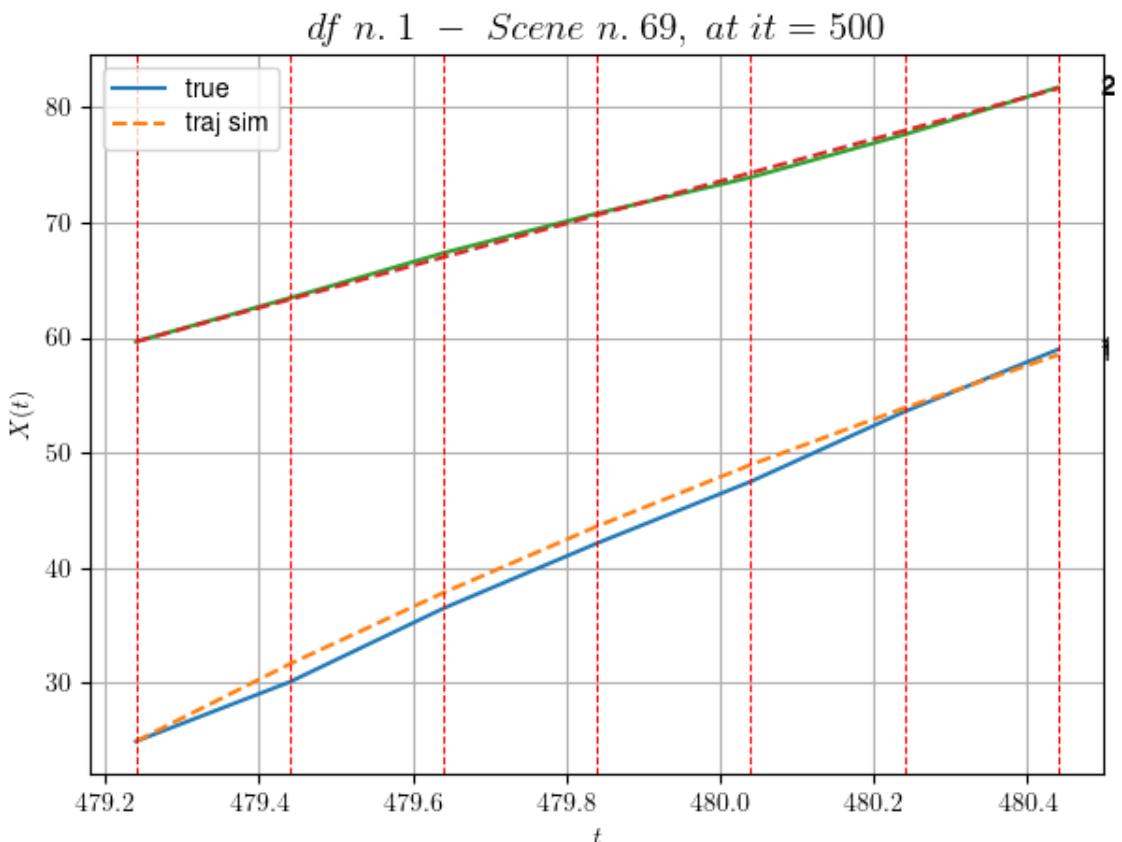
-----
- Time interval n.2: [479.64, 479.84]
  * y_true: [28.3308487]
  * v_ann: [28.886810302734375, 18.356873791100377]

-----
- Time interval n.3: [479.84, 480.04]
  * y_true: [26.8210504]
  * v_ann: [26.766258239746094, 18.356873791100377]

-----
- Time interval n.4: [480.04, 480.24]
  * y_true: [30.39151938]
  * v_ann: [24.71806526184082, 18.356873791100377]

-----
- Time interval n.5: [480.24, 480.44]
  * y_true: [27.06165505]
  * v_ann: [23.10289764404297, 18.356873791100377]

-----
* err= 0.6706454283448321
* Learning rate NN = 1.5690524378442205e-05
* diff = 0.013022361272881922
```



```
For scene 69/109
* use LR_NN=5e-05 with err=36.39923398456133 at it=24
* v0_scn_mean = 18.822598839367433
* MAE = 0.6652936320756175
```

```
=====
=====
```

```
df n.1, scene n.70/109
```

```
=====
=====
```

```
We have 5 time intervals inside [483.44,484.44]
```

```
- Time interval n.0: [483.44, 483.64]
  * y_true: [12.92542385]
  * v_ann: [19.661029815673828, 20.279545451255974]
```

```
-----
-----
```

```
- Time interval n.1: [483.64, 483.84]
  * y_true: [16.04562218]
  * v_ann: [20.40242576599121, 20.279545451255974]
```

```
-----
-----
```

```
- Time interval n.2: [483.84, 484.04]
  * y_true: [20.72591968]
  * v_ann: [20.384937286376953, 20.279545451255974]
```

```
-----
-----
```

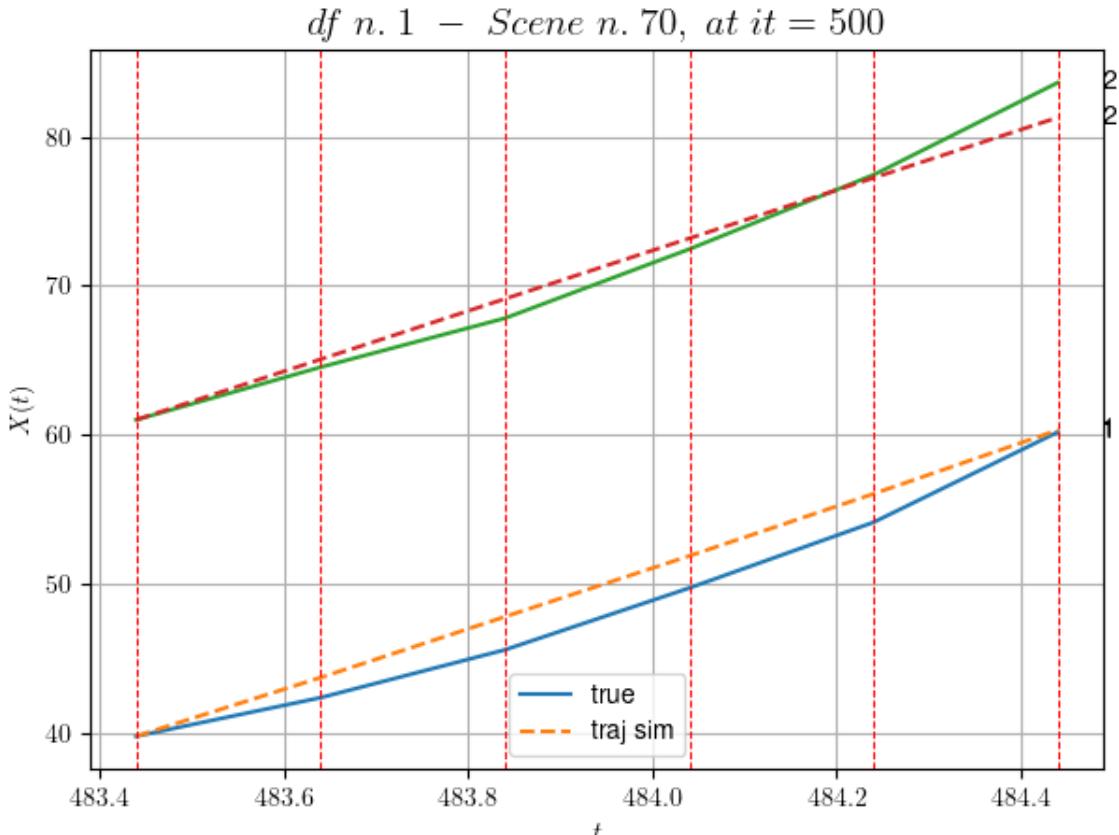
```
- Time interval n.3: [484.04, 484.24]
  * y_true: [22.0437041]
  * v_ann: [20.834537506103516, 20.279545451255974]
```

```
-----
-----
```

```
- Time interval n.4: [484.24, 484.44]
  * y_true: [30.27195457]
  * v_ann: [21.383724212646484, 20.279545451255974]
```

```
-----
-----
```

```
* err= 1.91901146433581
* Learning rate NN = 3.874203684972599e-06
* diff = 0.003155597681179012
```



For scene 70/109

* use LR_NN=1e-05 with err=16.55446241406157 at it=24
 * v0_scn_mean = 20.668363633131595
 * MAE = 1.878910192885486

df n.1, scene n.71/109

We have 4 time intervals inside [489.04, 489.84]

- Time interval n.0: [489.04, 489.24]
 * y_true: [26.7517836]
 * v_ann: [31.040420532226562, 22.729734196718677]

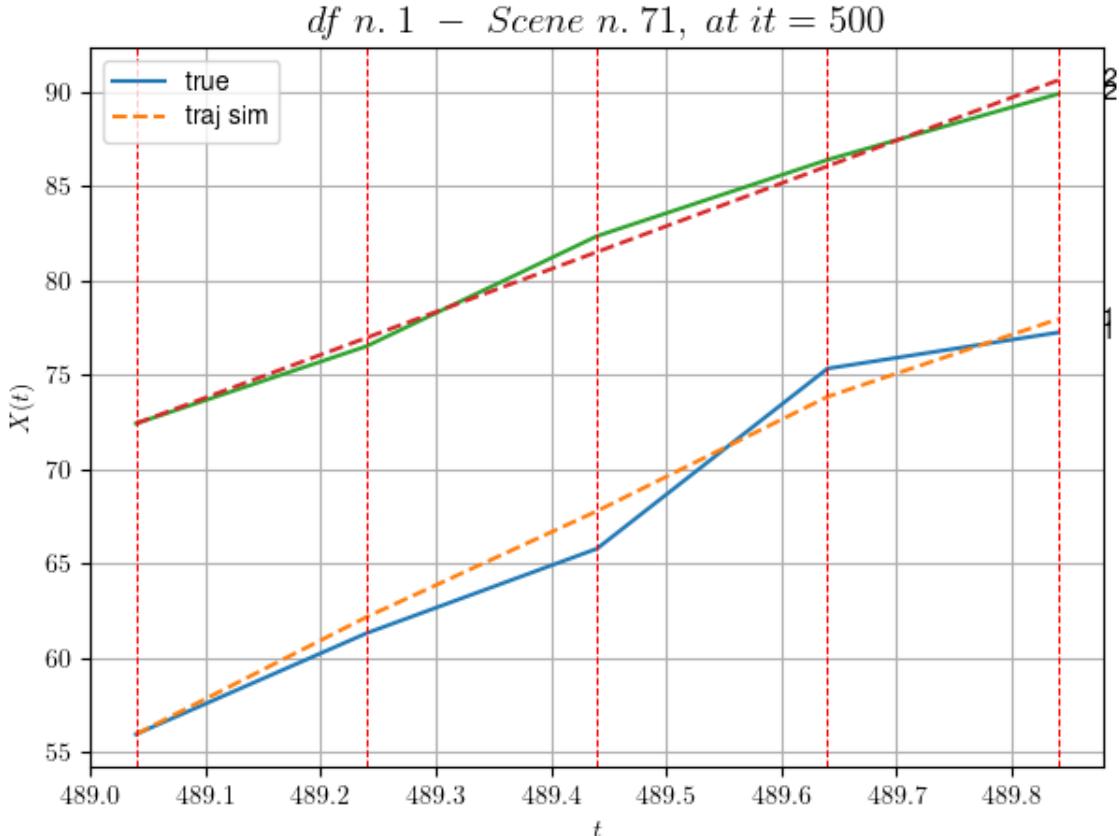
- Time interval n.1: [489.24, 489.44]
 * y_true: [22.40175221]
 * v_ann: [28.072416305541992, 22.729734196718677]

- Time interval n.2: [489.44, 489.64]
 * y_true: [47.70460004]
 * v_ann: [30.286951065063477, 22.729734196718677]

- Time interval n.3: [489.64, 489.84]
 * y_true: [9.55107371]

```
* v_ann: [20.550933837890625, 22.729734196718677]
```

```
* err= 0.8975086750943209
* Learning rate NN = 2.3914839403005317e-05
* diff = 0.0004423387664329592
```



For scene 71/109

```
* use LR_NN=5e-05 with err=7.447941611024644 at it=24
* v0_scn_mean = 23.0205448287948
* MAE = 0.895175807818964
```

df n.1, scene n.72/109

```
We have 4 time intervals inside [515.64, 516.44]
- Time interval n.0: [515.64, 515.84]
  * y_true: [6.11048435]
  * v_ann: [5.686012268066406, 6.109715857612067]
```

```
- Time interval n.1: [515.84, 516.04]
  * y_true: [6.11048435]
  * v_ann: [5.617030143737793, 6.109715857612067]
```

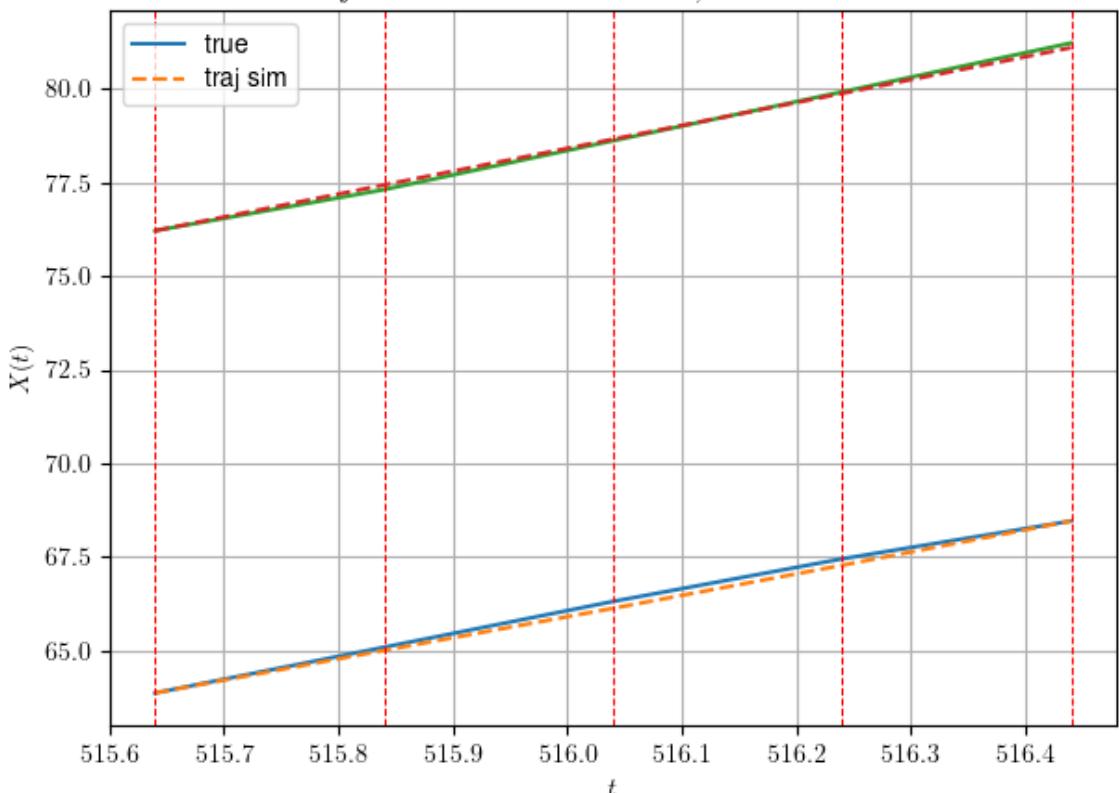
```
- Time interval n.2: [516.04, 516.24]
```

```
* y_true: [5.68648241]
* v_ann: [5.747446537017822, 6.109715857612067]
```

```
- Time interval n.3: [516.24, 516.44]
* y_true: [5.05047951]
* v_ann: [5.896543979644775, 6.109715857612067]
```

```
* err= 0.01049149418601186
* Learning rate NN = 4.7829678806010634e-05
* diff = 0.208820082250555e-07
```

df n. 1 – Scene n. 72, at it = 500



For scene 72/109

```
* use LR_NN=0.0001 with err=68.1006743248319 at it=24
* v0_scn_mean = 7.0653272231251885
* MAE = 0.010454676617604575
```

df n.1, scene n.73/109

We have 5 time intervals inside [529.64, 530.64]

- Time interval n.0: [529.64, 529.84]
 - * y_true: [25.15062432]
 - * v_ann: [32.96887969970703, 22.628998285034832]

- Time interval n.1: [529.84, 530.04]

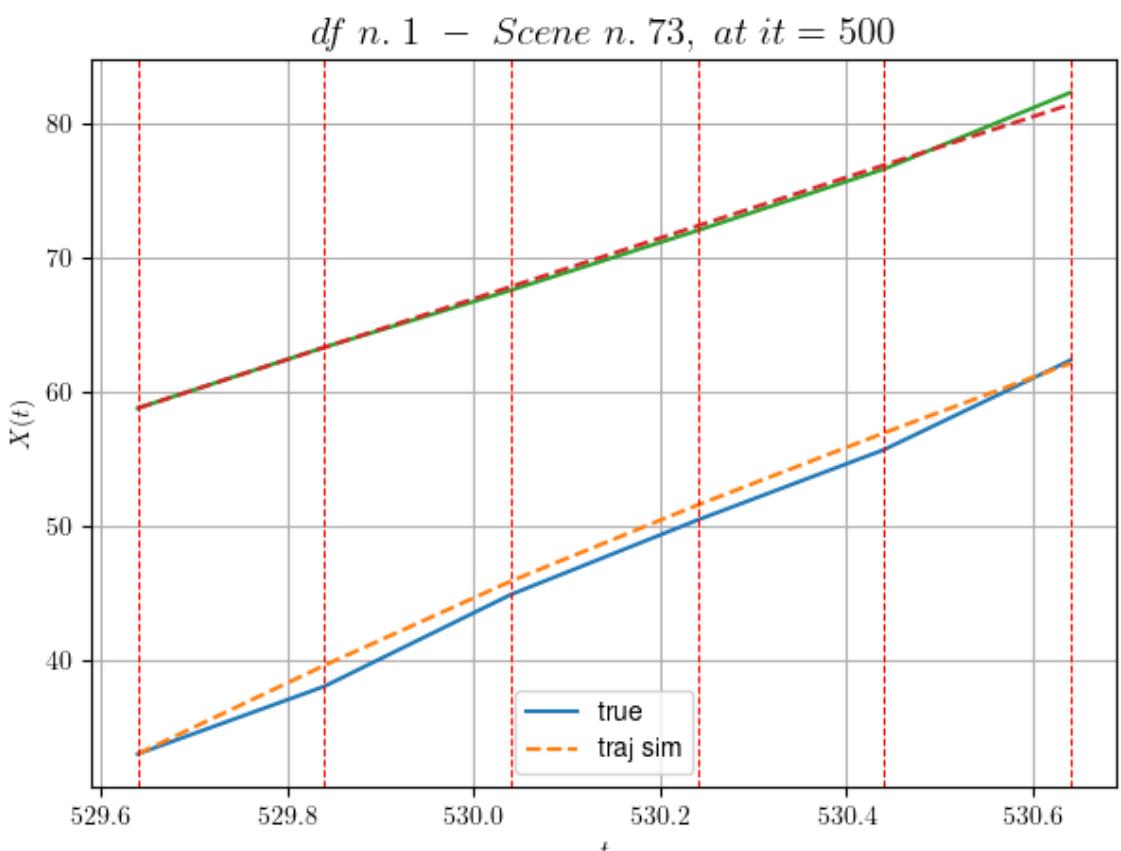
```
* y_true: [34.2011529]
* v_ann: [31.37502670288086, 22.628998285034832]
```

```
- Time interval n.2: [530.04, 530.24]
* y_true: [27.75123099]
* v_ann: [28.348617553710938, 22.628998285034832]
```

```
- Time interval n.3: [530.24, 530.44]
* y_true: [26.20143731]
* v_ann: [26.85924530029297, 22.628998285034832]
```

```
- Time interval n.4: [530.44, 530.64]
* y_true: [33.35225987]
* v_ann: [25.940898895263672, 22.628998285034832]
```

```
* err= 0.6139619781721838
* Learning rate NN = 1.9371018424862996e-05
* diff = 0.00882566543233565
```



For scene 73/109

```
* use LR_NN=5e-05 with err=10.192947690643575 at it=24
* v0_scn_mean = 22.923838353577704
* MAE = 0.612270345378935
```

```
df n.1, scene n.74/109
=====
=====
We have 8 time intervals inside [531.64,533.24]
- Time interval n.0: [531.64, 531.84]
  * y_true: [53.04019205]
  * v_ann: [39.39644241333008, 22.38264840590253]

-----
- Time interval n.1: [531.84, 532.04]
  * y_true: [26.08021954]
  * v_ann: [33.77983856201172, 22.38264840590253]

-----
- Time interval n.2: [532.04, 532.24]
  * y_true: [27.42037034]
  * v_ann: [32.22328567504883, 22.38264840590253]

-----
- Time interval n.3: [532.24, 532.44]
  * y_true: [23.47043117]
  * v_ann: [29.58074188232422, 22.38264840590253]

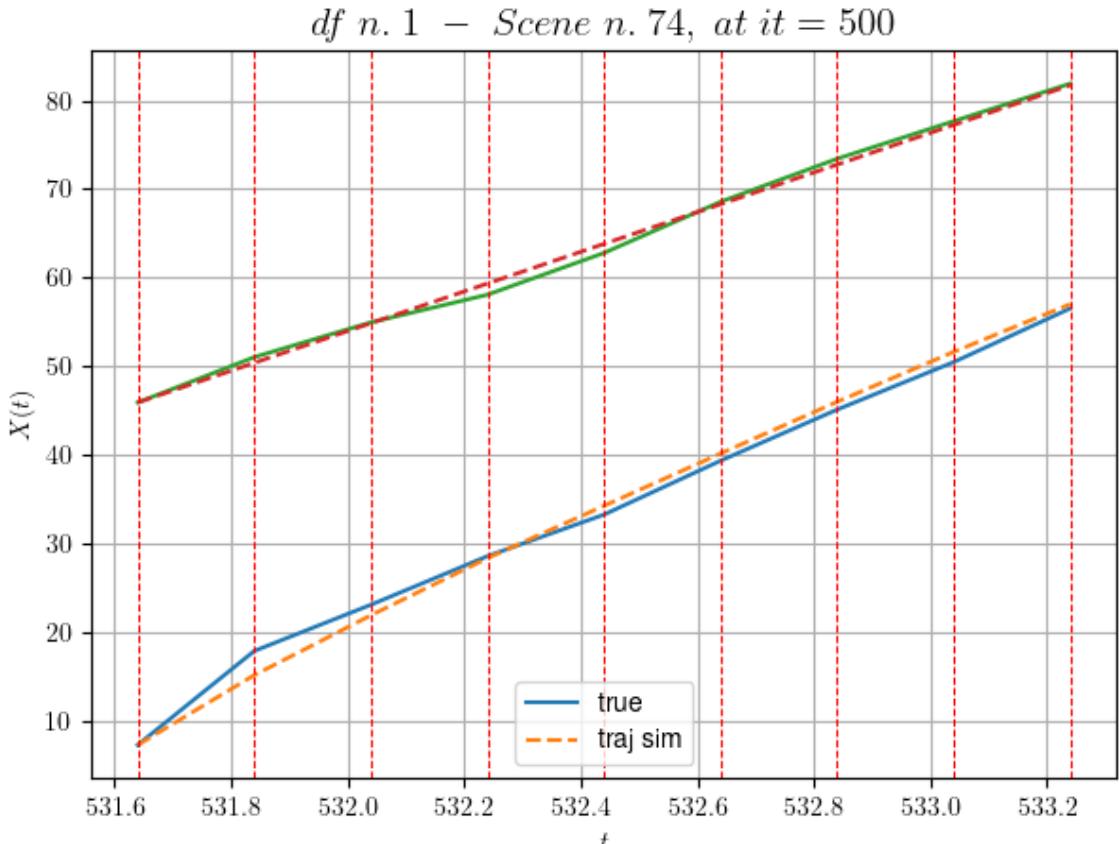
-----
- Time interval n.4: [532.44, 532.64]
  * y_true: [30.41082403]
  * v_ann: [29.505233764648438, 22.38264840590253]

-----
- Time interval n.5: [532.64, 532.84]
  * y_true: [28.87097713]
  * v_ann: [29.188648223876953, 22.38264840590253]

-----
- Time interval n.6: [532.84, 533.04]
  * y_true: [26.81121038]
  * v_ann: [28.19272232055664, 22.38264840590253]

-----
- Time interval n.7: [533.04, 533.24]
  * y_true: [30.30169714]
  * v_ann: [26.9652156829834, 22.38264840590253]

-----
* err= 0.926274493975169
* Learning rate NN = 2.058910467894748e-06
* diff = 0.0024268721202401755
```



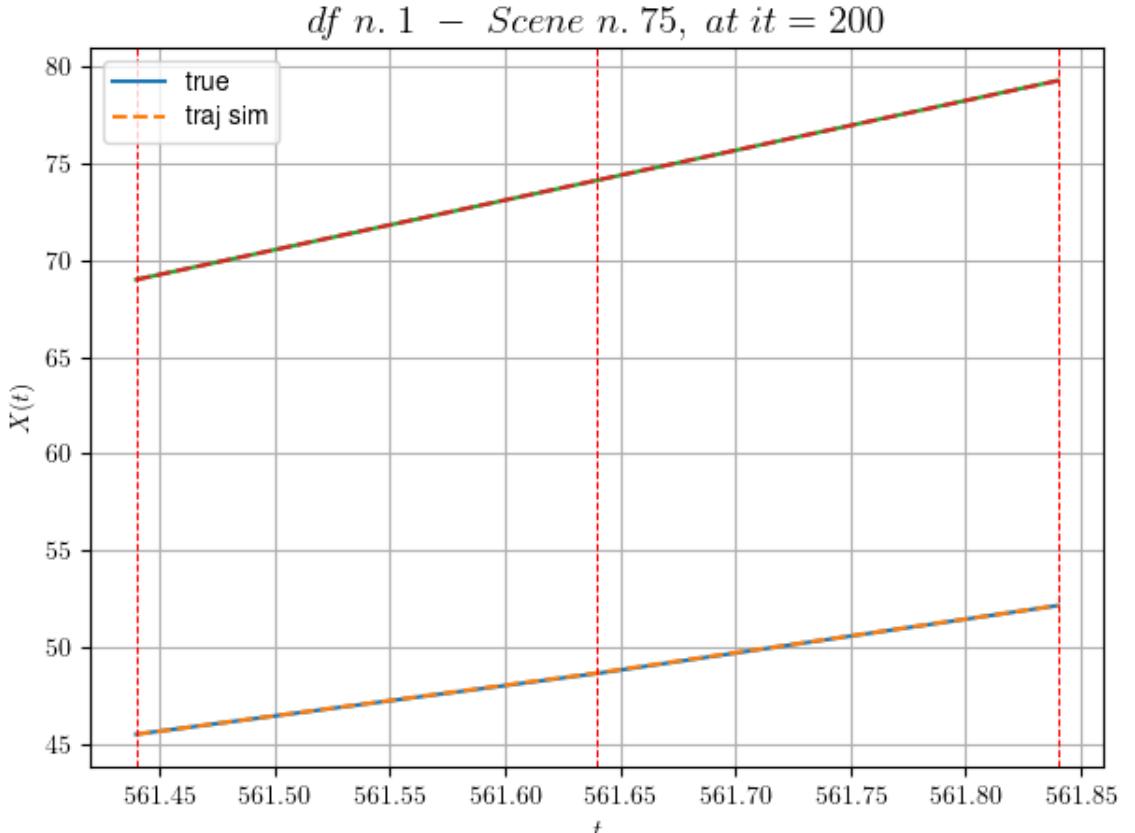
For scene 74/109

- * use LR_NN=1e-05 with err=26.818326793839606 at it=24
- * v0_scn_mean = 22.68734246960841
- * MAE = 0.923174514083507

df n.1, scene n.75/109

We have 2 time intervals inside [561.44, 561.84]

- * err= 0.0001604130047483984
- * Learning rate NN = 8.999999408842996e-05
- * diff = 6.406155852754563e-07



For scene 75/109

- * use LR_NN=0.0001 with err=0.606044861635193 at it=24
- * v0_scn_mean = 26.154934968913576
- * MAE = 0.0001539948388551001

df n.1, scene n.76/109

We have 4 time intervals inside [564.24, 565.04]

- Time interval n.0: [564.24, 564.44]
 - * y_true: [17.83478281]
 - * v_ann: [21.845251083374023, 14.268347650199582]

- Time interval n.1: [564.44, 564.64]
 - * y_true: [17.83478281]
 - * v_ann: [20.387794494628906, 14.268347650199582]

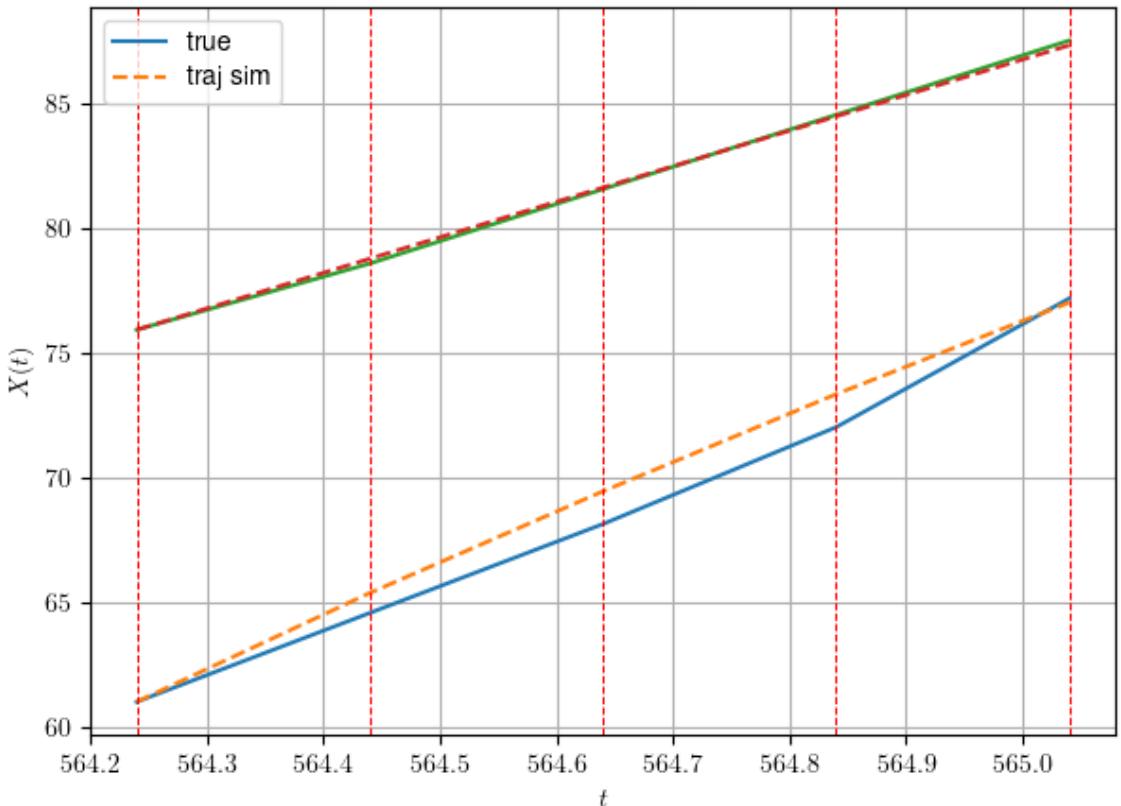
- Time interval n.2: [564.64, 564.84]
 - * y_true: [19.43339212]
 - * v_ann: [19.480405807495117, 14.268347650199582]

- Time interval n.3: [564.84, 565.04]
 - * y_true: [25.82782936]

```
* v_ann: [18.38408851623535, 14.268347650199582]
```

```
* err= 0.42257307798345123
* Learning rate NN = 4.7829678806010634e-05
* diff = 0.0032554566402120955
```

df n. 1 – Scene n. 76, at it = 500



For scene 76/109

```
* use LR_NN=0.0001 with err=29.74646238634746 at it=24
* v0 scn mean = 14.897613744071535
* MAE = 0.42257307798345123
```

df n.1, scene n.77/109

We have 8 time intervals inside [571.04, 572.64]

- Time interval n.0: [571.04, 571.24]
 - * y_true: [10.66294747]
 - * v_ann: [9.86928939819336, 20.877122500554435]

- Time interval n.1: [571.24, 571.44]
 - * y_true: [10.91066813]
 - * v_ann: [11.041007995605469, 20.877122500554435]

- Time interval n.2: [571.44, 571.64]

```
* y_true: [10.91066813]
* v_ann: [11.190399169921875, 20.877122500554435]
```

```
-----  
- Time interval n.3: [571.64, 571.84]  
* y_true: [10.91066813]  
* v_ann: [11.288798332214355, 20.877122500554435]
```

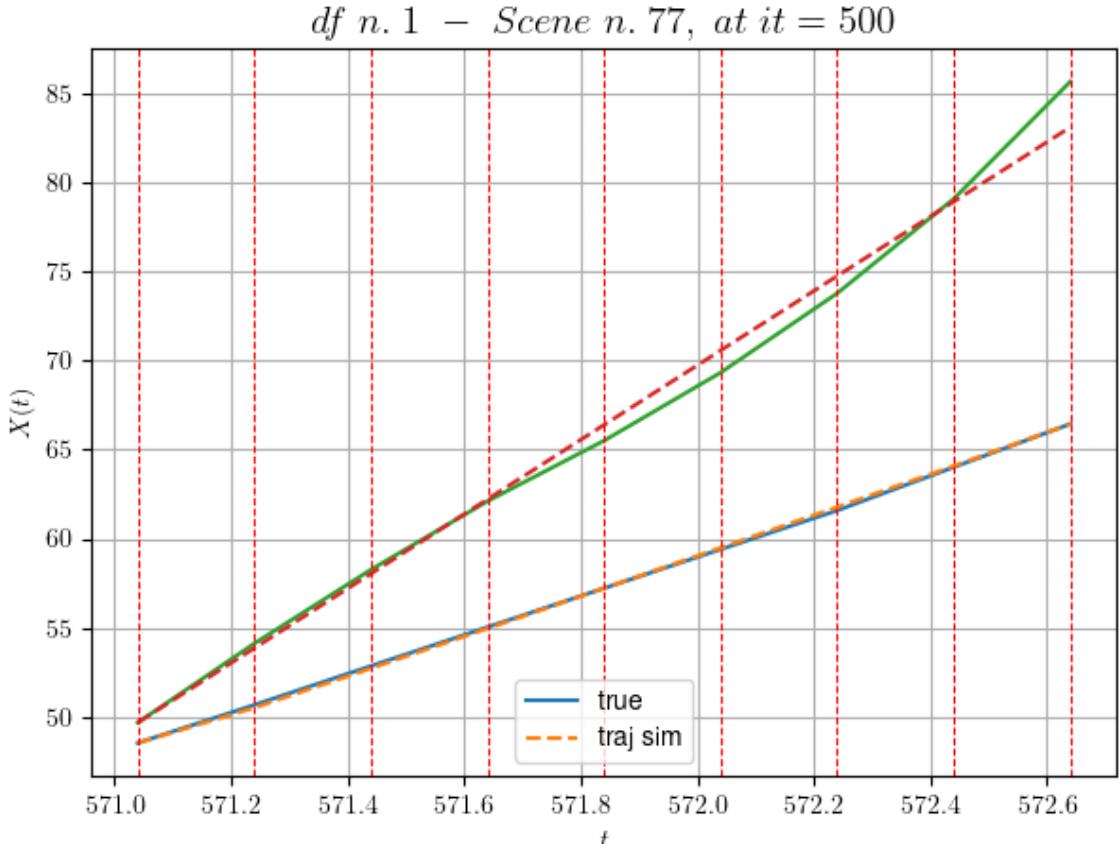
```
-----  
- Time interval n.4: [571.84, 572.04]  
* y_true: [10.91066813]  
* v_ann: [11.345809936523438, 20.877122500554435]
```

```
-----  
- Time interval n.5: [572.04, 572.24]  
* y_true: [10.91066813]  
* v_ann: [11.421270370483398, 20.877122500554435]
```

```
-----  
- Time interval n.6: [572.24, 572.44]  
* y_true: [12.13107553]  
* v_ann: [11.51988697052002, 20.877122500554435]
```

```
-----  
- Time interval n.7: [572.44, 572.64]  
* y_true: [12.13107553]  
* v_ann: [11.803611755371094, 20.877122500554435]
```

```
-----  
* err= 0.5588812274207581  
* Learning rate NN = 0.00020589104678947479  
* diff = 0.00014639415878914264
```



For scene 77/109

- * use LR_NN=0.001 with err=41.54512006376028 at it=24
- * v0_scn_mean = 21.242037600465594
- * MAE = 0.5538829008944679

df n.1, scene n.78/109

We have 11 time intervals inside [592.44, 594.64]

- Time interval n.0: [592.44, 592.64]
 - * y_true: [15.26011691]
 - * v_ann: [15.68730354309082, 12.857107640554462]

- Time interval n.1: [592.64, 592.84]
 - * y_true: [15.09015603]
 - * v_ann: [15.623425483703613, 12.857107640554462]

- Time interval n.2: [592.84, 593.04]
 - * y_true: [14.43018672]
 - * v_ann: [15.562788963317871, 12.857107640554462]

- Time interval n.3: [593.04, 593.24]
 - * y_true: [18.17030736]

```
* v_ann: [15.510013580322266, 12.857107640554462]
```

```
- Time interval n.4: [593.24, 593.44]
* y_true: [14.59028713]
* v_ann: [15.421716690063477, 12.857107640554462]
```

```
- Time interval n.5: [593.44, 593.64]
* y_true: [15.22037721]
* v_ann: [15.323311805725098, 12.857107640554462]
```

```
- Time interval n.6: [593.64, 593.84]
* y_true: [13.44037198]
* v_ann: [15.188292503356934, 12.857107640554462]
```

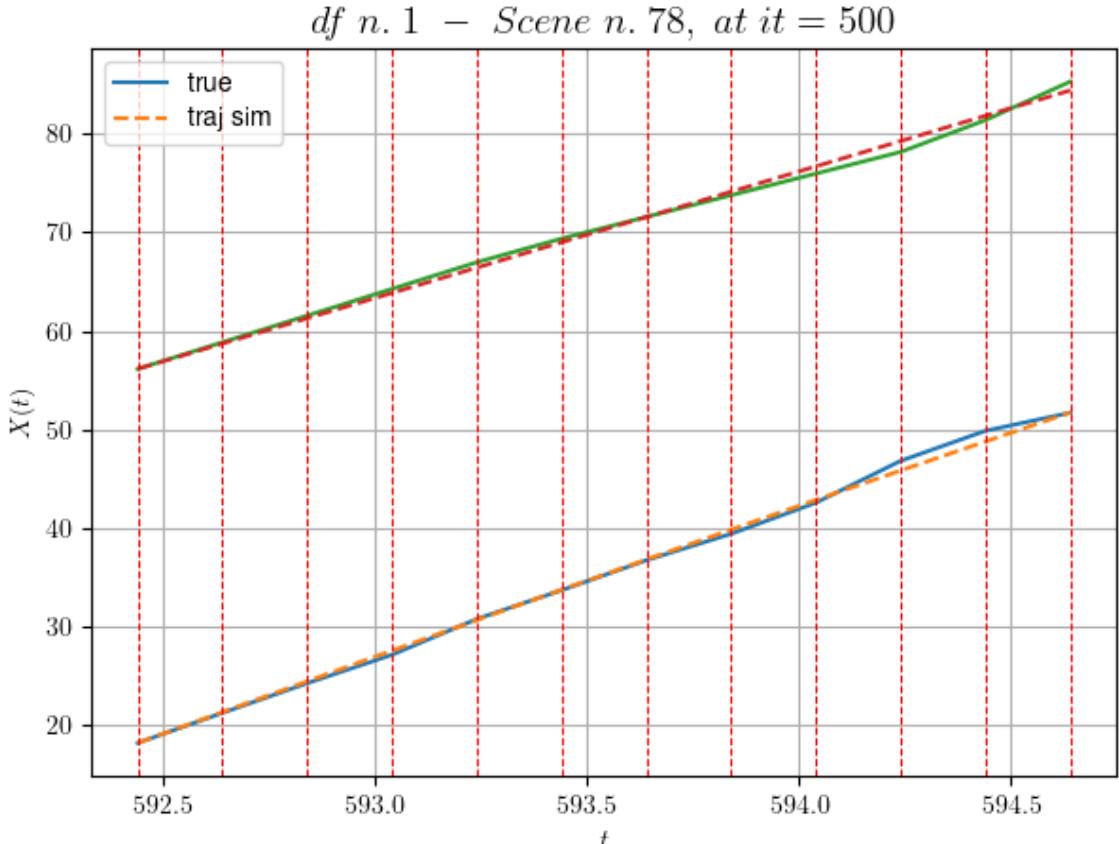
```
- Time interval n.7: [593.84, 594.04]
* y_true: [15.79052842]
* v_ann: [15.078073501586914, 12.857107640554462]
```

```
- Time interval n.8: [594.04, 594.24]
* y_true: [21.27083337]
* v_ann: [14.94111442565918, 12.857107640554462]
```

```
- Time interval n.9: [594.24, 594.44]
* y_true: [15.24067558]
* v_ann: [14.725224494934082, 12.857107640554462]
```

```
- Time interval n.10: [594.44, 594.64]
* y_true: [9.15045602]
* v_ann: [14.762495040893555, 12.857107640554462]
```

```
* err= 0.260754984959604
* Learning rate NN = 5.4709462347091176e-06
* diff = 0.0005713076706340137
```



For scene 78/109

- * use LR_NN=5e-05 with err=250.15131863126538 at it=24
- * v0_scn_mean = 13.542823334801048
- * MAE = 0.2592544766339627

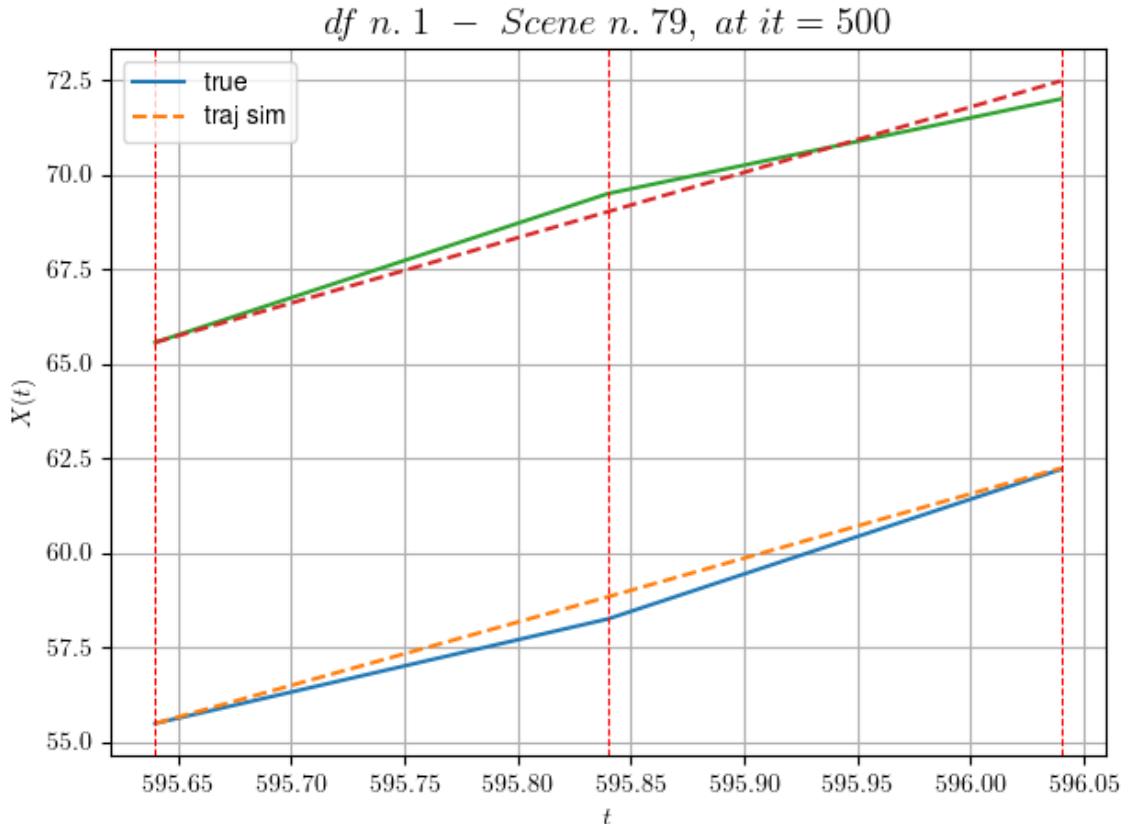
df n.1, scene n.79/109

We have 2 time intervals inside [595.64, 596.04]

- Time interval n.0: [595.64, 595.84]
 - * y_true: [13.82084467]
 - * v_ann: [16.744972229003906, 17.284900942460645]

- Time interval n.1: [595.84, 596.04]
 - * y_true: [19.77136821]
 - * v_ann: [16.99985694885254, 17.284900942460645]

- * err= 0.13312043098919135
- * Learning rate NN = 0.00036449998151510954
- * diff = 0.0004107604019482902



For scene 79/109

```
* use LR_NN=0.0005 with err=5.916869031059722 at it=24
* v0_scn_mean = 17.793504904664506
* MAE = 0.13250939473568057
```

df n.1, scene n.80/109

We have 4 time intervals inside [597.64, 598.44]

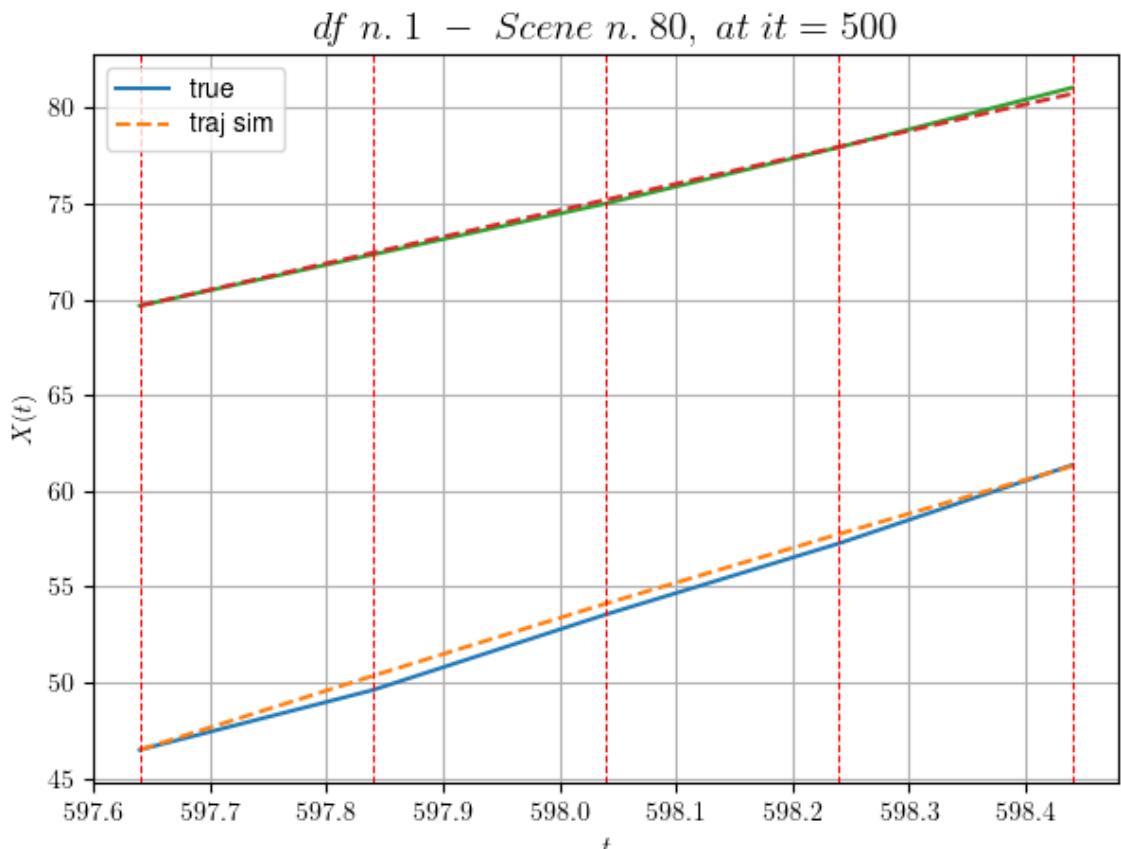
- Time interval n.0: [597.64, 597.84]
 - * y_true: [15.60070033]
 - * v_ann: [19.302799224853516, 13.84095960962116]

- Time interval n.1: [597.84, 598.04]
 - * y_true: [19.75102085]
 - * v_ann: [18.877059936523438, 13.84095960962116]

- Time interval n.2: [598.04, 598.24]
 - * y_true: [18.55110518]
 - * v_ann: [18.163898468017578, 13.84095960962116]

- Time interval n.3: [598.24, 598.44]
 - * y_true: [20.45139489]
 - * v_ann: [17.7254581451416, 13.84095960962116]

```
* err= 0.12610962033192039
* Learning rate NN = 2.3914839403005317e-05
* diff = 3.7838856483340955e-05
```



For scene 80/109

```
* use LR_NN=5e-05 with err=31.024574509158803 at it=24
* v0_scn_mean = 14.487321225113396
* MAE = 0.12550214992113137
```

df n.1, scene n.81/109

We have 2 time intervals inside [14.24, 14.64]

- Time interval n.0: [14.24, 14.44]
 - * y_true: [32.1443344 20.77111865]
 - * v_ann: [27.143159866333008, 29.293928146362305, 2

7.63627828527217]

- Time interval n.1: [14.44, 14.64]
 - * y_true: [32.5721373 24.27162308]
 - * v_ann: [27.2263240814209, 25.70427703857422, 27.6

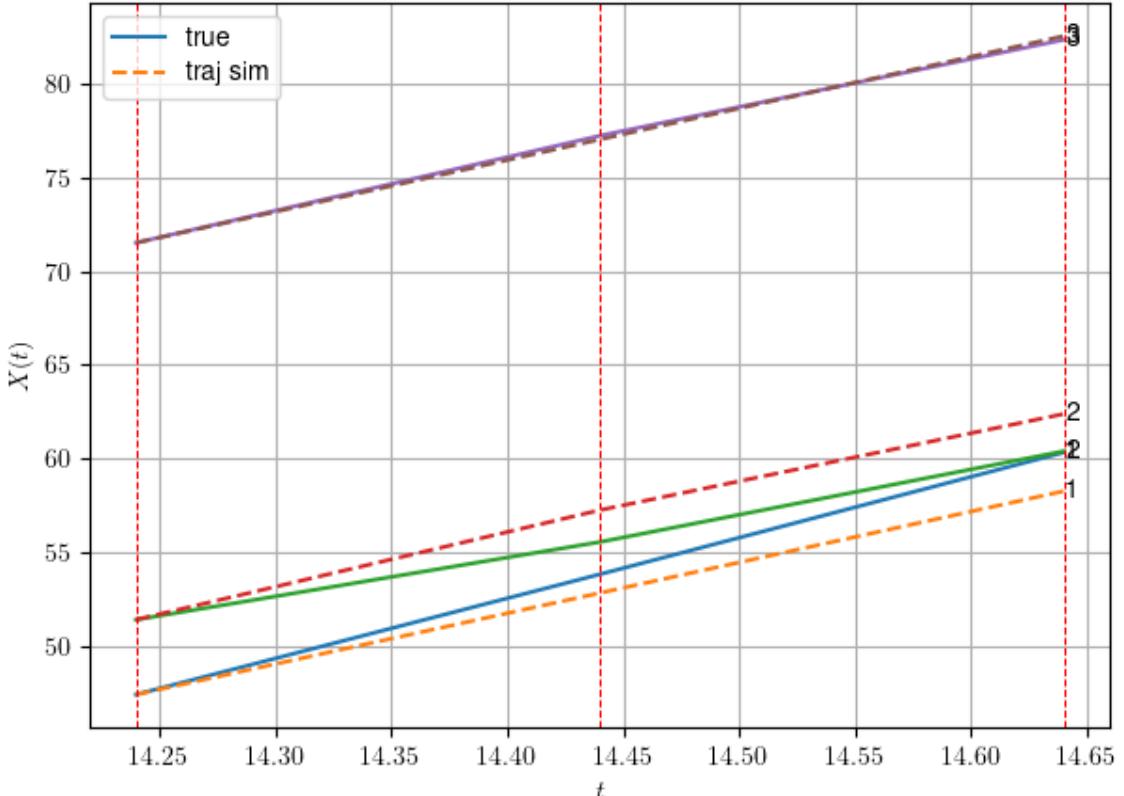
3627828527217]

```

* err= 1.3590569796904128
* Learning rate NN = 0.0007289999630302191
* diff = 0.00551176029961575

```

df n. 1 – Scene n. 81, at it = 500



For scene 81/109

```

* use LR_NN=0.001 with err=17.12531117982019 at it=24
* v0_scn_mean = 27.778101482029896
* MAE = 1.3590569796904128

```

df n.1, scene n.82/109

We have 5 time intervals inside [23.64, 24.64]

- Time interval n.0: [23.64, 23.84]
 - * y_true: [26.6509107 26.65125804]
 - * v_ann: [26.480472564697266, 25.346982955932617, 3

1.184420565840092]

- Time interval n.1: [23.84, 24.04]
 - * y_true: [29.05143519 29.47691739]
 - * v_ann: [26.868614196777344, 26.260026931762695, 3

1.184420565840092]

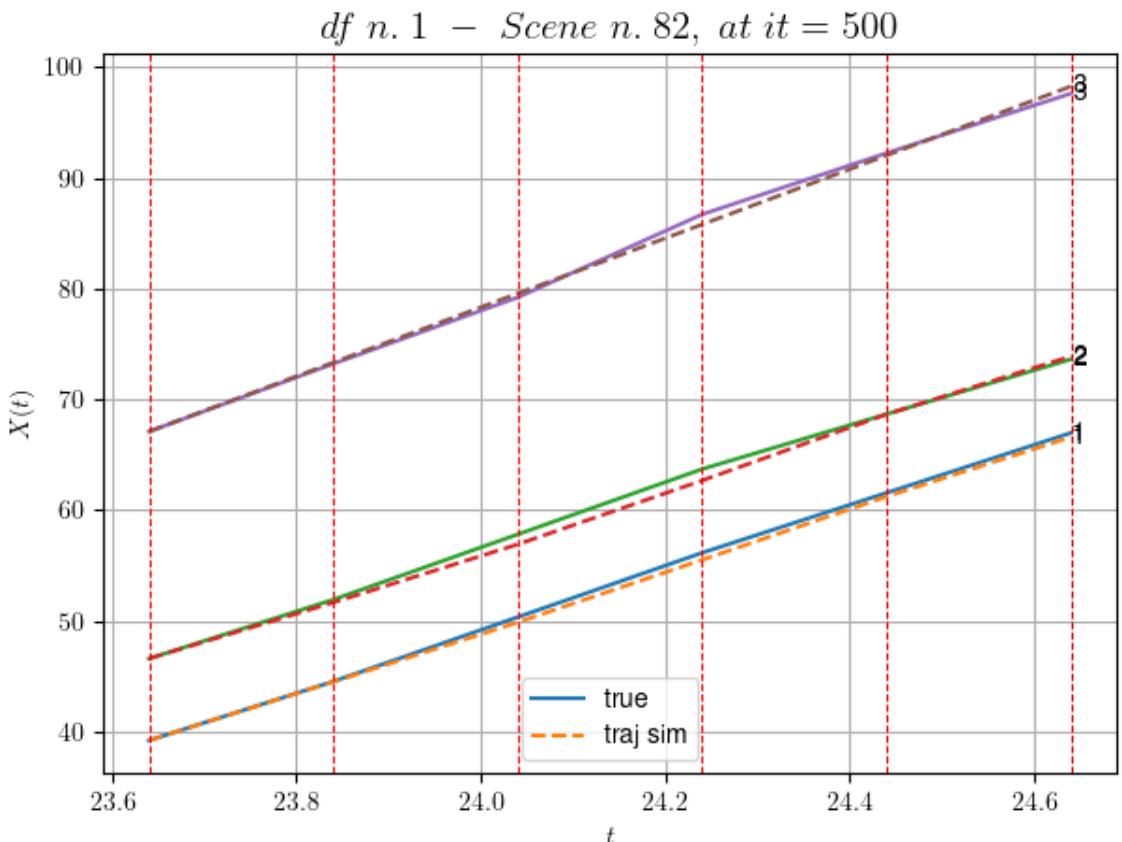
- Time interval n.2: [24.04, 24.24]
 - * y_true: [29.05143519 29.47691739]
 - * v_ann: [28.225006103515625, 28.8458194732666, 31.

184420565840092]

- Time interval n.3: [24.24, 24.44]
 - * y_true: [27.07699139 24.80226709]
 - * v_ann: [28.578832626342773, 29.876623153686523, 31.184420565840092]

- Time interval n.4: [24.44, 24.64]
 - * y_true: [27.07699139 24.80226709]
 - * v_ann: [26.8747501373291, 26.23640251159668, 31.84420565840092]

- * err= 0.24032246476600594
- * Learning rate NN = 0.0003874204121530056
- * diff = 0.007212360205648971



For scene 82/109

- * use LR_NN=0.001 with err=27.96004091573705 at it=24
- * v0_scn_mean = 31.113355385067628
- * MAE = 0.15913412785595007

df n.1, scene n.83/109

We have 5 time intervals inside [72.44, 73.44]

- Time interval n.0: [72.44, 72.64]
 - * y_true: [25.85001228 31.10049693]
 - * v_ann: [27.387554168701172, 28.129396438598633, 28.25092057390812]

- Time interval n.1: [72.64, 72.84]
 - * y_true: [30.00006309 33.82077482]
 - * v_ann: [27.52424430847168, 28.31622886657715, 28.25092057390812]

- Time interval n.2: [72.84, 73.04]
 - * y_true: [23.75011307 26.19081077]
 - * v_ann: [28.36944580078125, 28.946279525756836, 28.25092057390812]

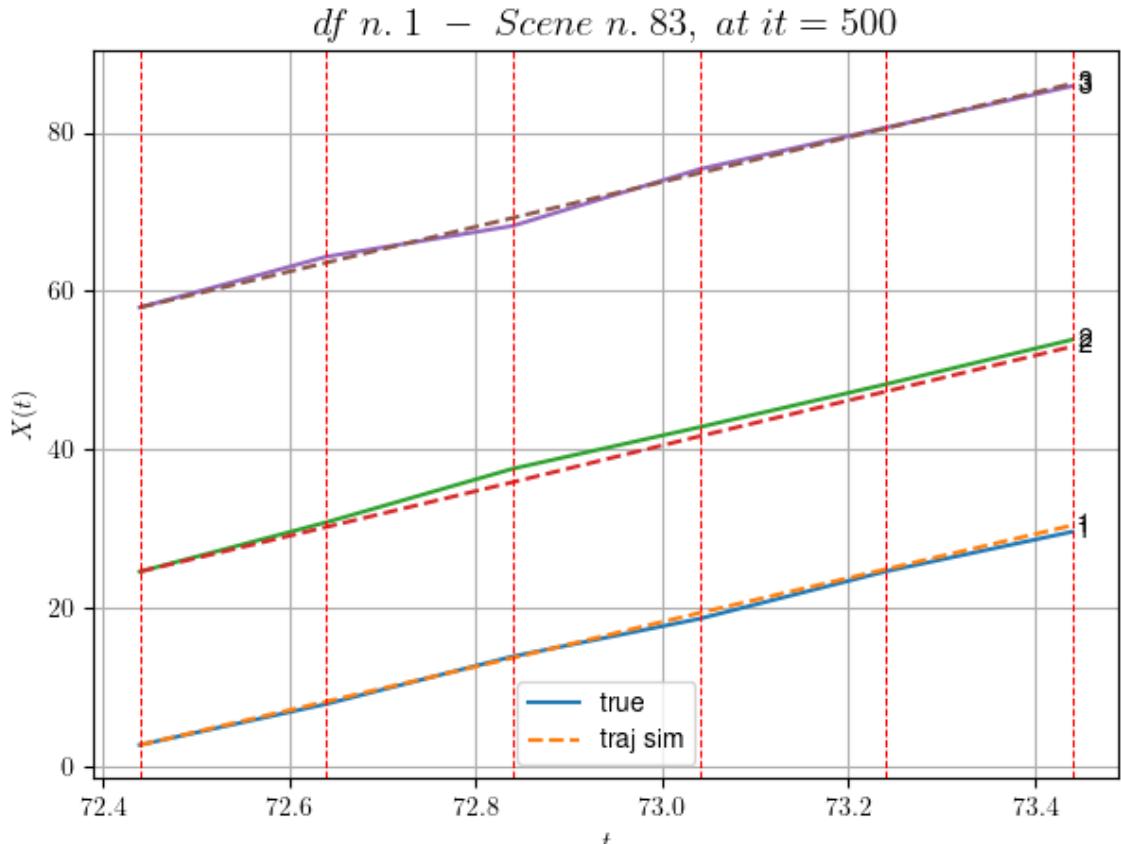
- Time interval n.3: [73.04, 73.24]
 - * y_true: [29.90025591 27.11111625]
 - * v_ann: [27.595420837402344, 28.26833724975586, 28.25092057390812]

- Time interval n.4: [73.24, 73.44]
 - * y_true: [25.05033948 28.161422]
 - * v_ann: [27.696693420410156, 28.38211441040039, 28.25092057390812]

* err= 0.5249471055530134

* Learning rate NN = 3.874203684972599e-05

* diff = 0.006062142595554709



For scene 83/109

- * use LR_NN=0.0001 with err=3.522983730086469 at it=24
- * v0_scn_mean = 28.35586526094393
- * MAE = 0.41897013137698286

df n.1, scene n.84/109

We have 3 time intervals inside [84.24, 84.84]

- Time interval n.0: [84.24, 84.44]
 - * y_true: [29.4403562 23.48047527]
 - * v_ann: [27.958696365356445, 32.50214385986328, 29.49436559358174]

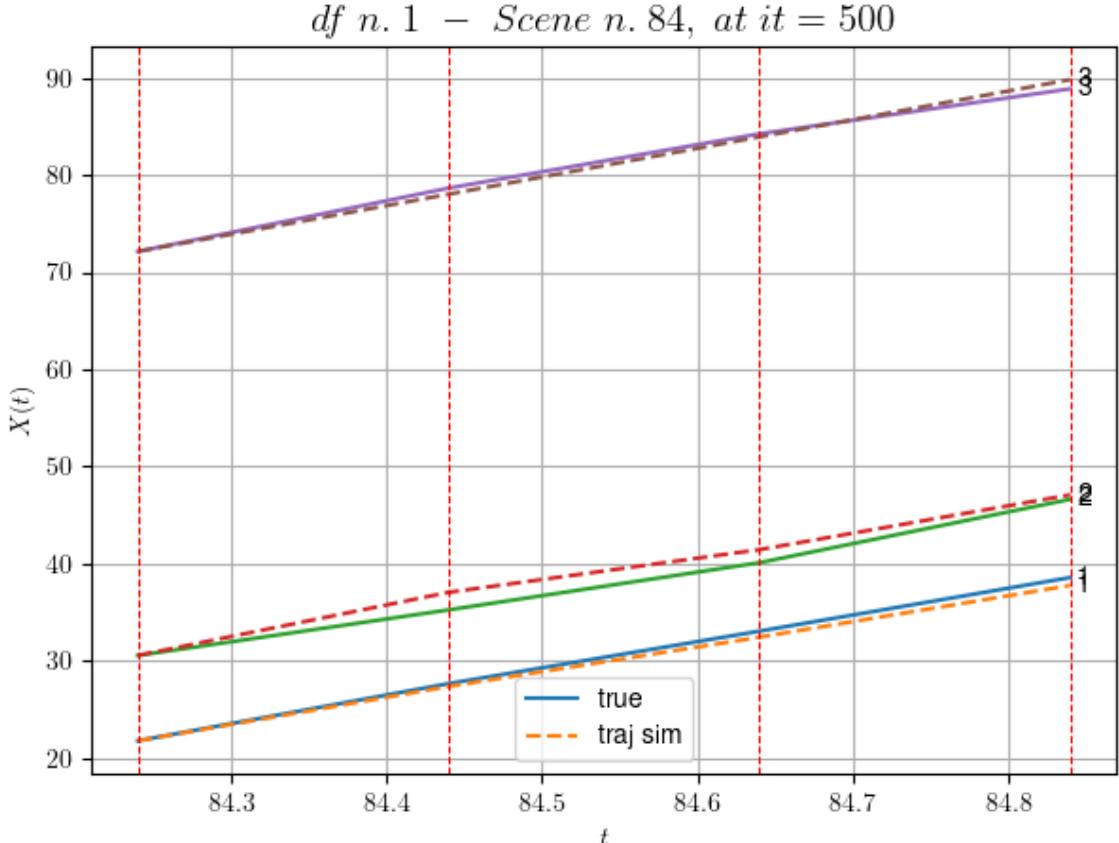
- Time interval n.1: [84.44, 84.64]
 - * y_true: [27.01049004 24.28067739]
 - * v_ann: [25.390132904052734, 21.976280212402344, 29.49436559358174]

- Time interval n.2: [84.64, 84.84]
 - * y_true: [27.60069732 32.65118399]
 - * v_ann: [26.64858055114746, 28.223012924194336, 29.49436559358174]

```

* err= 0.6494271275416998
* Learning rate NN = 0.0002952449722215533
* diff = 0.004044041906543616

```



For scene 84/109

```

* use LR_NN=0.0005 with err=21.61383556114502 at it=24
* v0_scn_mean = 29.52470363526496
* MAE = 0.3523538905051638

```

df n.1, scene n.85/109

We have 2 time intervals inside [131.64, 132.04]

- Time interval n.0: [131.64, 131.84]
 - * y_true: [30.80073929 29.11067519]
 - * v_ann: [28.95949363708496, 27.47212028503418, 28.44289270224725]

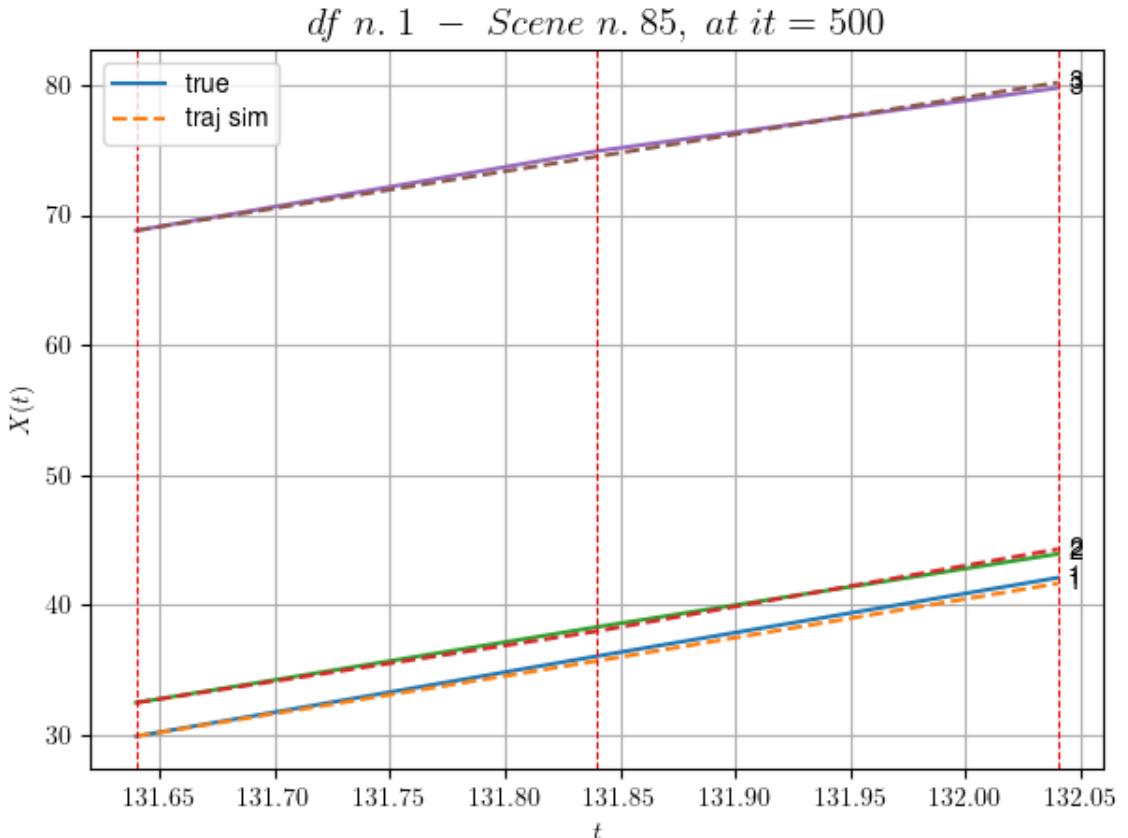
- Time interval n.1: [131.84, 132.04]
 - * y_true: [30.16079766 28.07097758]
 - * v_ann: [29.806550979614258, 31.578964233398438, 28.44289270224725]

```

* err= 0.1026017406119329
* Learning rate NN = 0.00036449998151510954

```

* diff = 0.00020414523191951417



For scene 85/109

* use LR_NN=0.0005 with err=16.400153316077258 at it=24
 * v0_scn_mean = 28.53631907020152
 * MAE = 0.1026017406119329

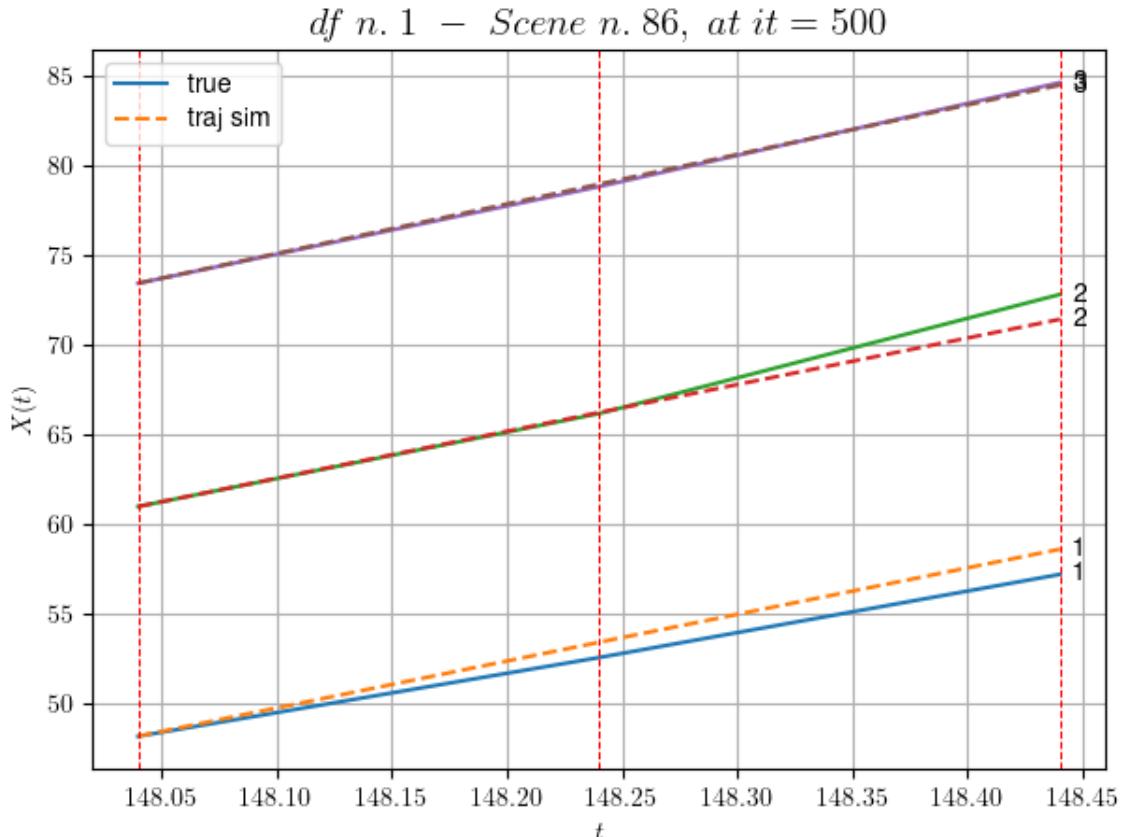
df n.1, scene n.86/109

We have 2 time intervals inside [148.04, 148.44]

- Time interval n.0: [148.04, 148.24]
 - * y_true: [21.93113488 25.90203153]
 - * v_ann: [26.192636489868164, 26.20171356201172, 27.621656721216496]

- Time interval n.1: [148.24, 148.44]
 - * y_true: [23.17638158 33.20310746]
 - * v_ann: [25.936630249023438, 25.970760345458984, 27.621656721216496]

- * err= 0.518252933584632
- * Learning rate NN = 7.289998757187277e-05
- * diff = 0.0006579820984281559



For scene 86/109

```
* use LR_NN=0.0001 with err=0.8111330105558991 at it=24
* v0_scn_mean = 27.764357211160537
* MAE = 0.5126034447852189
```

df n.1, scene n.87/109

We have 2 time intervals inside [161.64, 162.04]

- Time interval n.0: [161.64, 161.84]
 - * y_true: [31.66062591 25.70084842]
 - * v_ann: [28.640979766845703, 28.59665298461914, 3

4.71181519803506]

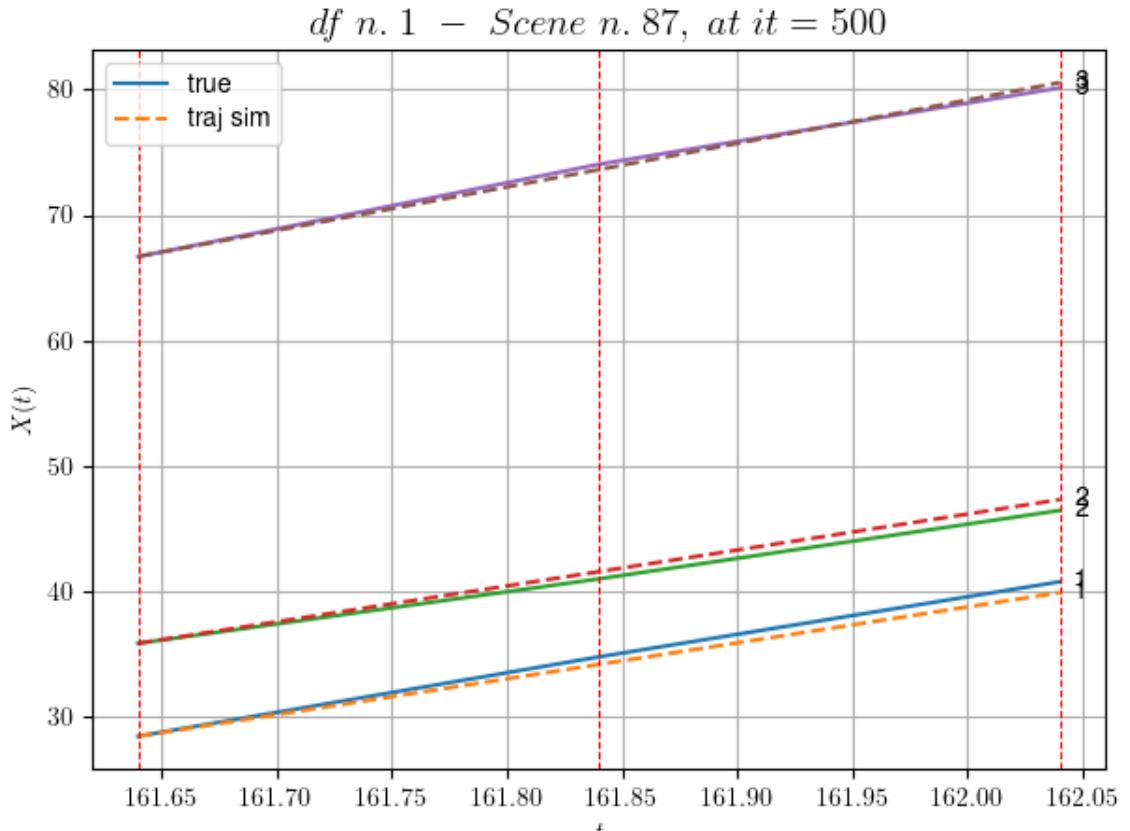
- Time interval n.1: [161.84, 162.04]
 - * y_true: [29.96082912 27.30094687]
 - * v_ann: [28.675500869750977, 28.709794998168945, 3

4.71181519803506]

* err= 0.2823486861027251

* Learning rate NN = 0.00036449998151510954

* diff = 1.7012924902193305e-08

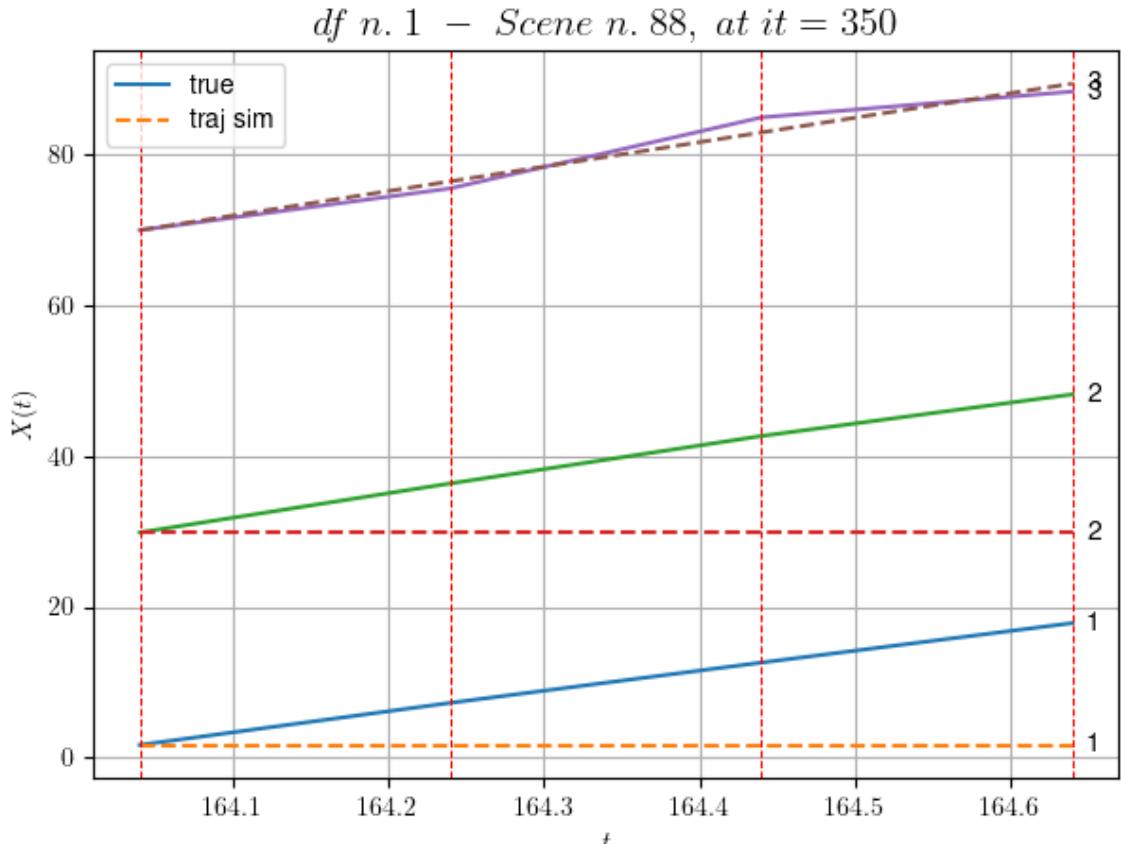


For scene 87/109

* use LR_NN=0.0005 with err=12.842665504812468 at it=24
* v0_scn_mean = 34.42910649770421
* MAE = 0.2734260048768548

df n.1, scene n.88/109

We have 3 time intervals inside [164.04,164.64]
* err= 79.96250952850134
* Learning rate NN = 0.0003280499659013003
* diff = 3.3026904588950856e-07

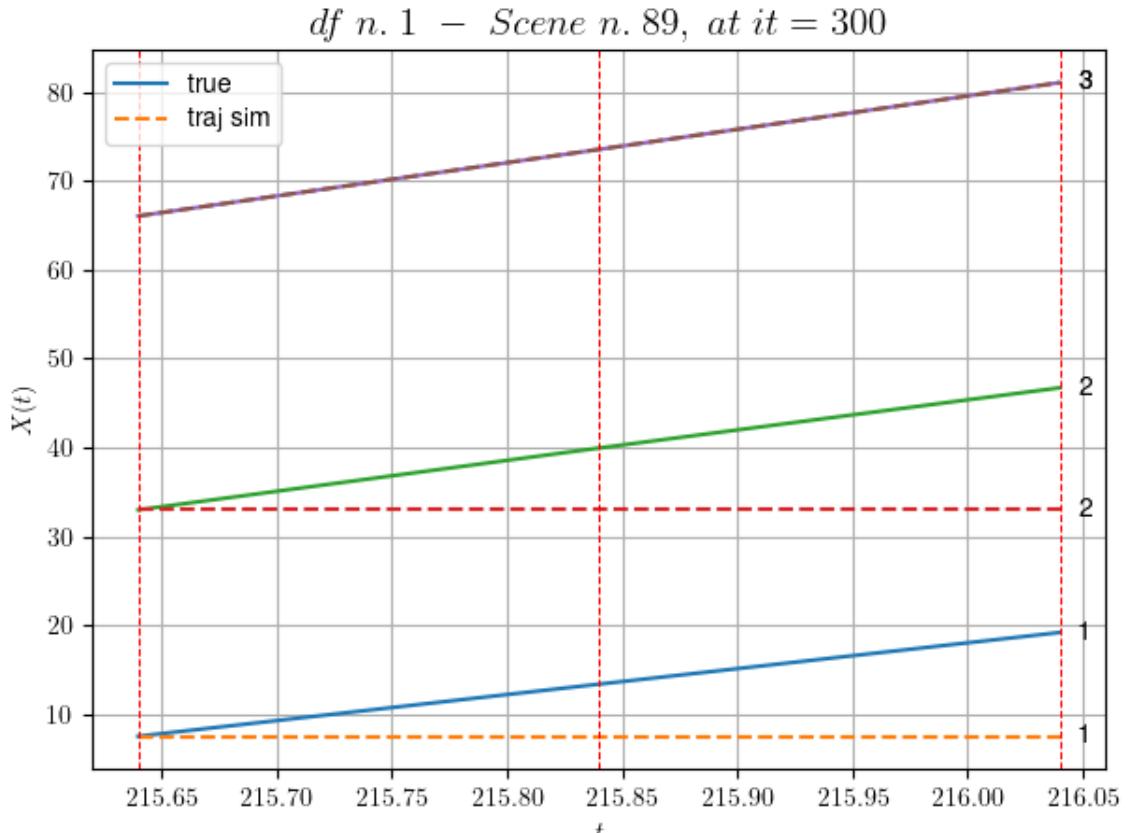


For scene 88/109

* use LR_NN=0.0005 with err=1.536384801931448 at it=24
* v0_scn_mean = 32.22432243084919
* MAE = 2.2167669996241854

df n.1, scene n.89/109

We have 2 time intervals inside [215.64, 216.04]
* err= 45.219143593108754
* Learning rate NN = 4.049999552080408e-05
* diff = 7.299568309804272e-07

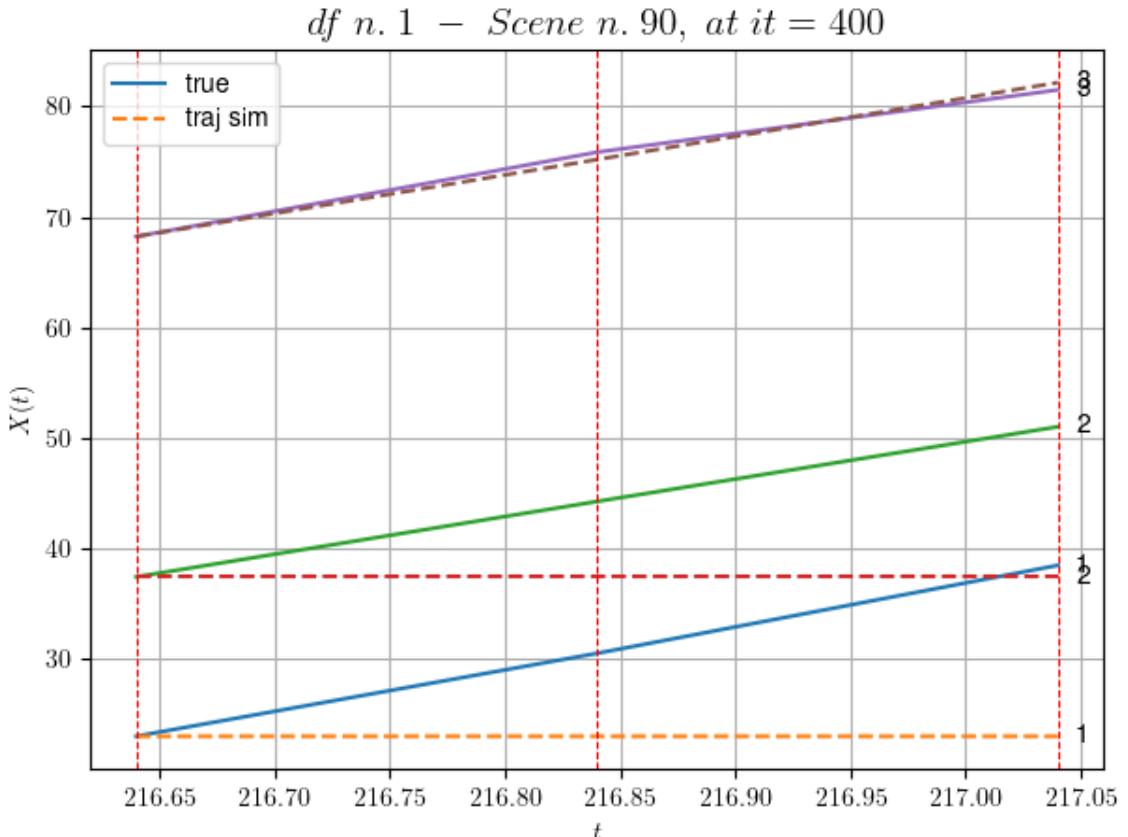


For scene 89/109

* use LR_NN=5e-05 with err=1.3352041167341604 at it=24
* v0_scn_mean = 36.73542957932045
* MAE = 45.219143593108754

df n.1, scene n.90/109

We have 2 time intervals inside [216.64, 217.04]
* err= 58.64129738653666
* Learning rate NN = 3.6449993785936385e-05
* diff = 6.4870438620801e-07



For scene 90/109

- * use LR_NN=5e-05 with err=10.31204127878286 at it=24
- * v0_scn_mean = 34.487938898881175
- * MAE = 58.631462875821335

df n.1, scene n.91/109

We have 2 time intervals inside [240.64, 241.04]

- Time interval n.0: [240.64, 240.84]
 - * y_true: [28.54090912 24.62265201]
 - * v_ann: [31.457059860229492, 30.43550682067871, 3

3.34476984108649]

- Time interval n.1: [240.84, 241.04]

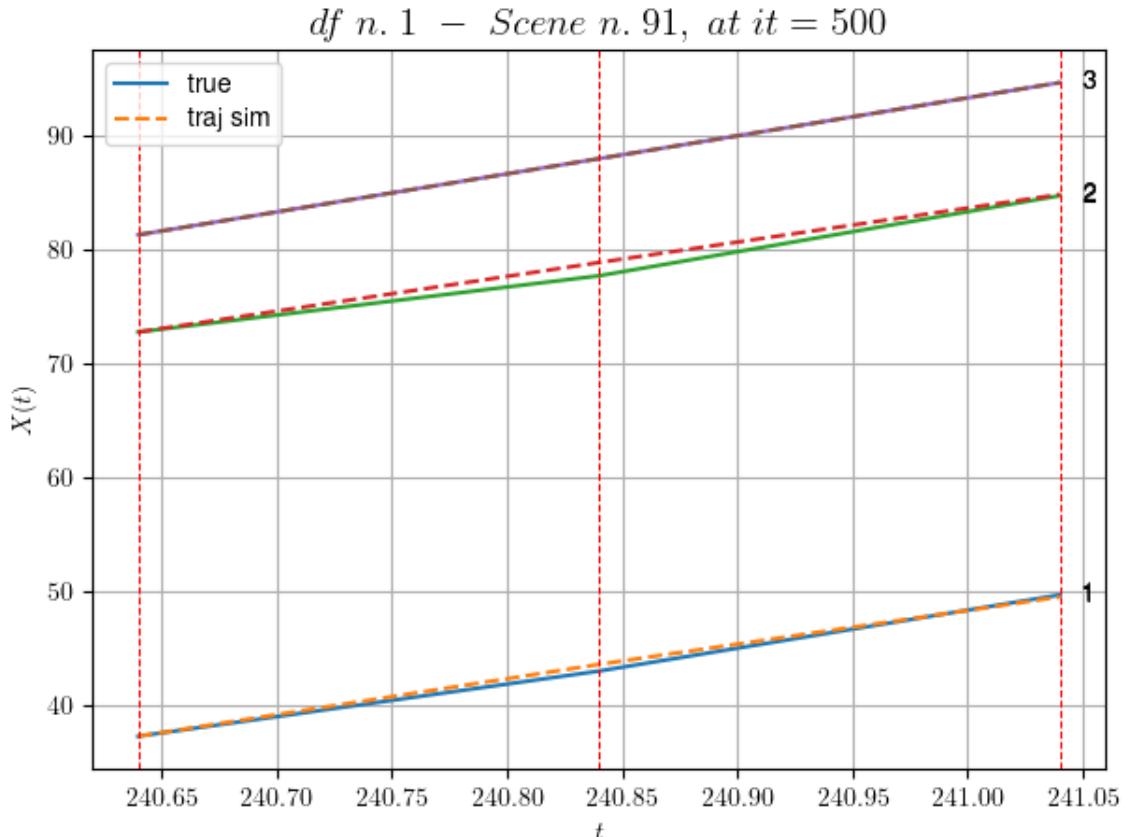
- * y_true: [33.36143299 35.0745887]
 - * v_ann: [29.553861618041992, 29.817243576049805, 3

3.34476984108649]

* err= 0.19288380944170466

* Learning rate NN = 7.289998757187277e-05

* diff = 0.0003206277629502763



For scene 91/109

```
* use LR_NN=0.0001 with err=8.212623896741134 at it=24
* v0_scn_mean = 33.144083800793915
* MAE = 0.16579528486688672
```

df n.1, scene n.92/109

We have 2 time intervals inside [253.64, 254.04]

- Time interval n.0: [253.64, 253.84]
 - * y_true: [26.81042151 28.10122634]
 - * v_ann: [30.520376205444336, 30.788949966430664, 2

7.474879582348645]

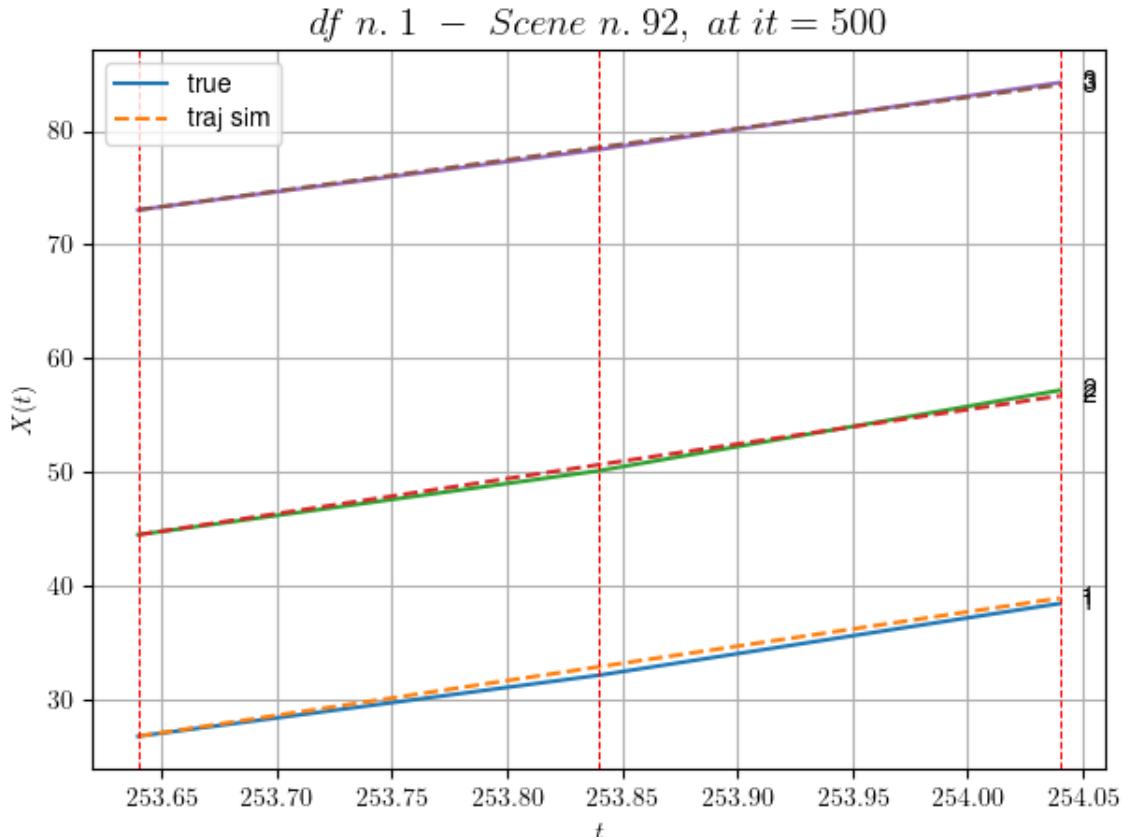
- Time interval n.1: [253.84, 254.04]
 - * y_true: [31.5007643 35.35225595]
 - * v_ann: [30.14133071899414, 30.21356773376465, 27.

474879582348645]

* err= 0.15336630723513928

* Learning rate NN = 3.6449993785936385e-05

* diff = 0.00016350311600044076



For scene 92/109

- * use LR_NN=5e-05 with err=1.587209288949878 at it=24
- * v0_scn_mean = 27.626386694035588
- * MAE = 0.15199250050729932

df n.1, scene n.93/109

We have 5 time intervals inside [262.64, 263.64]

- Time interval n.0: [262.64, 262.84]
 - * y_true: [36.75102901 34.57147294]
 - * v_ann: [30.907487869262695, 30.730777740478516, 35.9310974274654]

- Time interval n.1: [262.84, 263.04]
 - * y_true: [20.65076329 34.76181544]
 - * v_ann: [31.776613235473633, 32.13652420043945, 35.9310974274654]

- Time interval n.2: [263.04, 263.24]
 - * y_true: [40.30193432 23.95156631]
 - * v_ann: [30.955812454223633, 30.844440460205078, 35.9310974274654]

```

-----  

    - Time interval n.3: [263.24, 263.44]  

      * y_true: [32.10201673 27.4721836 ]  

      * v_ann: [31.238079071044922, 31.26808738708496, 3  

      5.9310974274654]

```

```

-----  

    - Time interval n.4: [263.44, 263.64]  

      * y_true: [17.75131644 43.4543127 ]  

      * v_ann: [31.007671356201172, 30.708906173706055, 3  

      5.9310974274654]

```

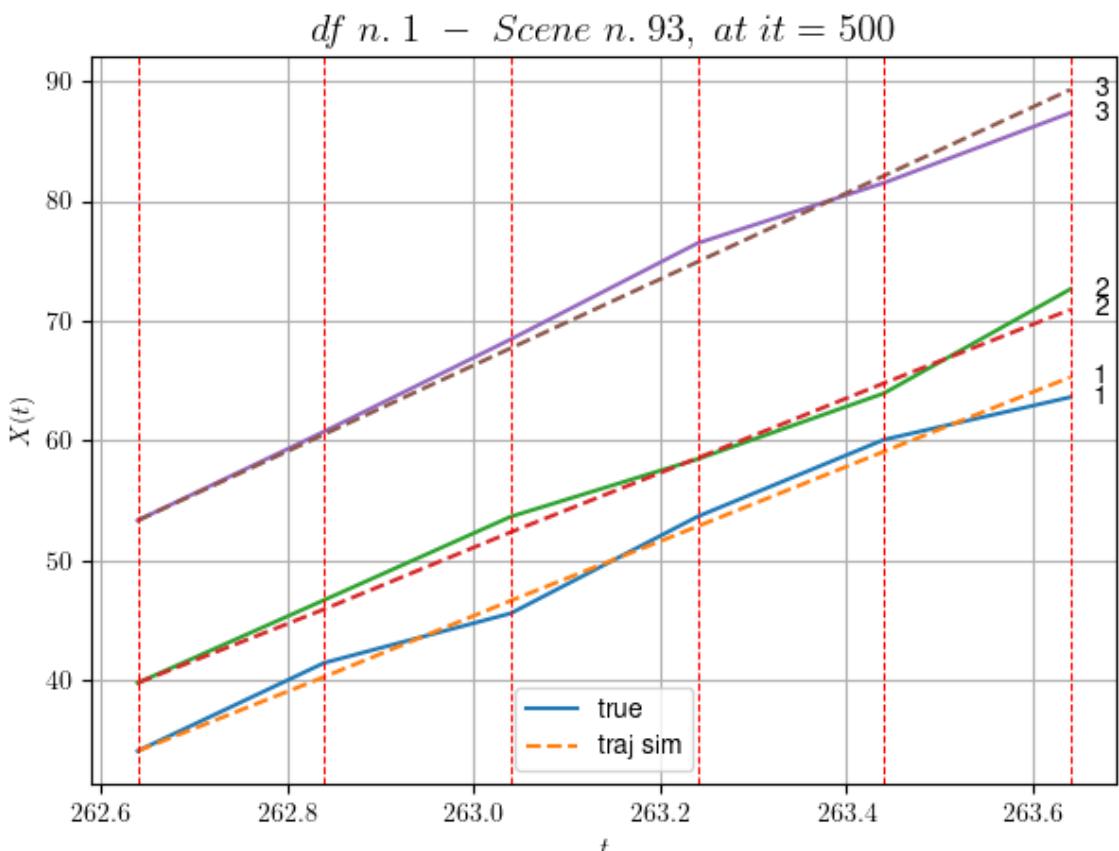
```

* err= 1.1052384760495215  

* Learning rate NN = 0.0001937102060765028  

* diff = 0.0009196795497914412

```



```

For scene 93/109
* use LR_NN=0.0005 with err=33.454950103966695 at it=24
* v0_scn_mean = 35.575231848110114
* MAE = 1.0558727135600625
=====
```

```
=====
```

df n.1, scene n.94/109

```
=====
```

```

We have 4 time intervals inside [314.84,315.64]
- Time interval n.0: [314.84, 315.04]
  * y_true: [29.62016755 31.54681236]
=====
```

```

* v_ann: [29.932209014892578, 29.675527572631836, 3
0.926247858926374]

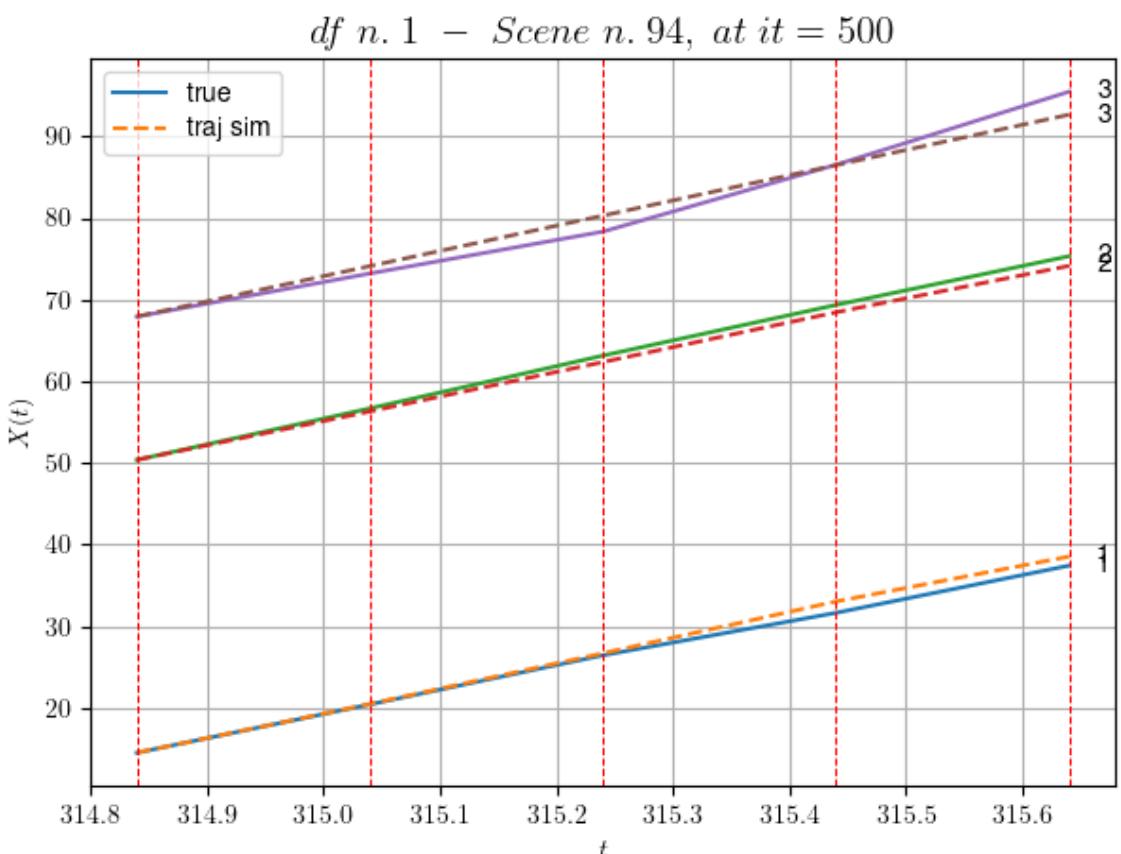
-----
- Time interval n.1: [315.04, 315.24]
* y_true: [30.12030665 32.32740505]
* v_ann: [31.03018569946289, 30.221952438354492, 3
0.926247858926374]

-----
- Time interval n.2: [315.24, 315.44]
* y_true: [25.99040223 31.02242591]
* v_ann: [31.738920211791992, 30.505908966064453, 3
0.926247858926374]

-----
- Time interval n.3: [315.44, 315.64]
* y_true: [28.95064907 29.88823464]
* v_ann: [27.533031463623047, 28.45755958557129, 3
0.926247858926374]

* err= 1.2548938092666513
* Learning rate NN = 0.000239148415857926
* diff = 0.008638538329628798

```



For scene 94/109

```

* use LR_NN=0.0005 with err=21.538930346913435 at it=24
* v0_scn_mean = 30.870673028977784
* MAE = 1.2548938092666513

```

```
=====
=====
```

df n.1, scene n.95/109

```
=====
=====
```

We have 6 time intervals inside [325.24,326.44]

- Time interval n.0: [325.24, 325.44]
 - * y_true: [29.06068603 28.85087529]
 - * v_ann: [29.185510635375977, 28.55706787109375, 2
9.804033810069278]

```
-----
```

- Time interval n.1: [325.44, 325.64]
 - * y_true: [28.37089255 31.80128105]
 - * v_ann: [29.220243453979492, 28.457992553710938, 2
9.804033810069278]

```
-----
```

- Time interval n.2: [325.64, 325.84]
 - * y_true: [30.70143178 22.60113815]
 - * v_ann: [29.45858383178711, 28.985977172851562, 2
9.804033810069278]

```
-----
```

- Time interval n.3: [325.84, 326.04]
 - * y_true: [31.42655806 32.52725213]
 - * v_ann: [29.052913665771484, 28.20732879638672, 2
9.804033810069278]

```
-----
```

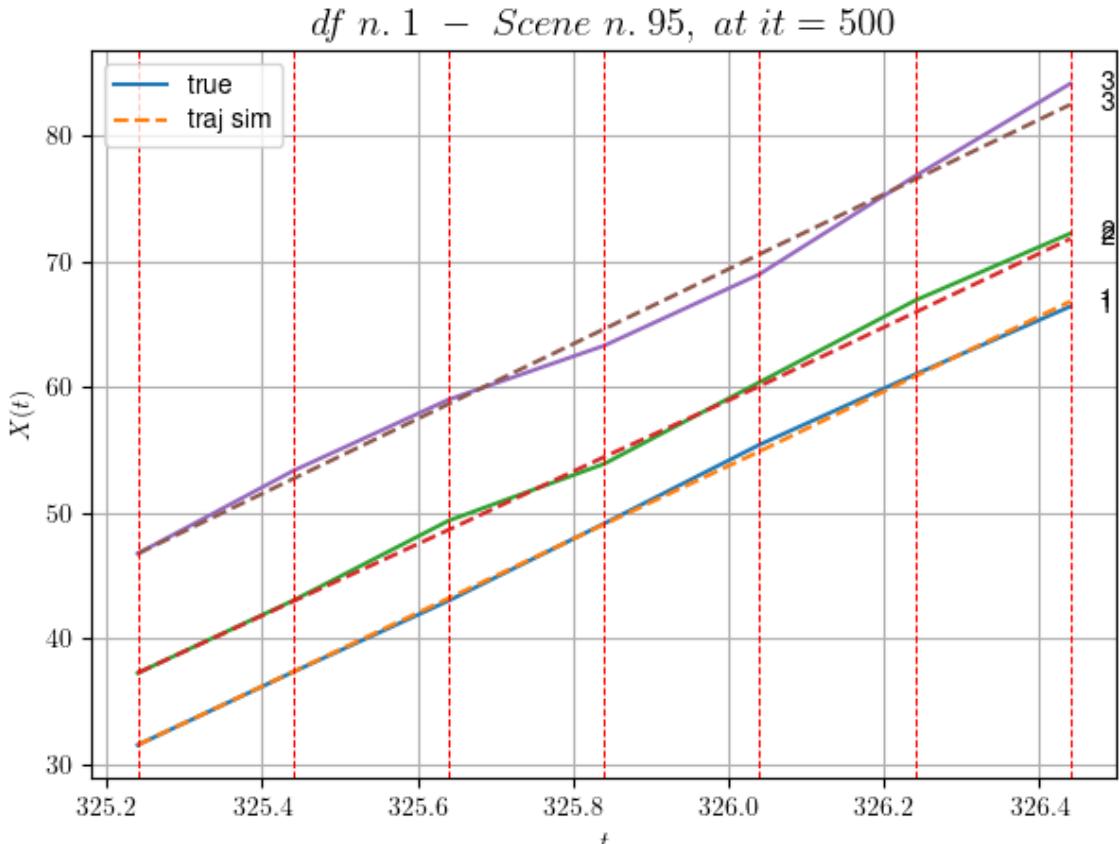
- Time interval n.4: [326.04, 326.24]
 - * y_true: [27.9669351 32.52725213]
 - * v_ann: [29.837543487548828, 29.336759567260742, 2
9.804033810069278]

```
-----
```

- Time interval n.5: [326.24, 326.44]
 - * y_true: [27.10202936 26.72764736]
 - * v_ann: [29.885343551635742, 29.369977951049805, 2
9.804033810069278]

```
-----
```

- * err= 0.4850212481796257
- * Learning rate NN = 0.00031381050939671695
- * diff = 0.004368377493514153



For scene 95/109

- * use LR_NN=0.001 with err=14.679732527989495 at it=24
- * v0_scn_mean = 29.815791772666397
- * MAE = 0.4850212481796257

df n.1, scene n.96/109

We have 3 time intervals inside [354.04, 354.64]

- Time interval n.0: [354.04, 354.24]
 - * y_true: [29.77169216 32.15176545]
 - * v_ann: [30.532920837402344, 27.66319465637207, 32.693522172935516]

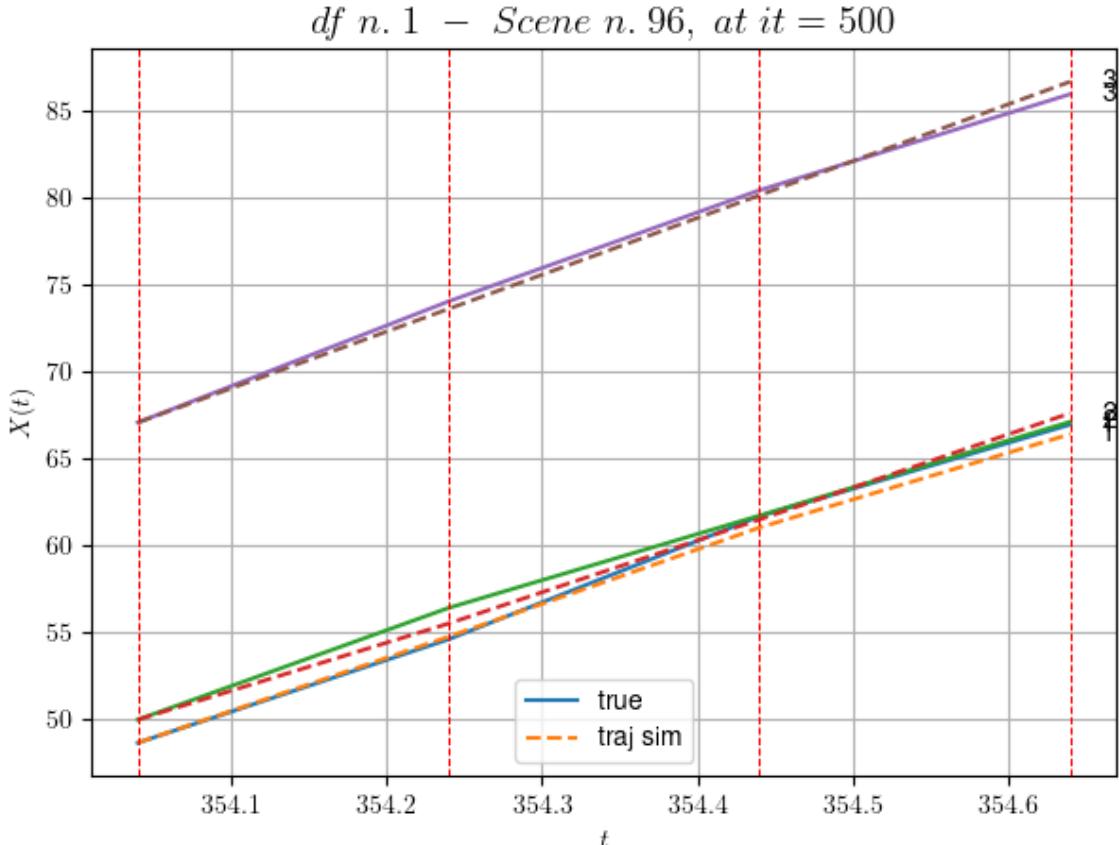
- Time interval n.1: [354.24, 354.44]
 - * y_true: [35.38251939 26.55179403]
 - * v_ann: [31.38513946533203, 29.903995513916016, 32.693522172935516]

- Time interval n.2: [354.44, 354.64]
 - * y_true: [26.40441101 27.01000163]
 - * v_ann: [26.895814895629883, 30.629831314086914, 32.693522172935516]

```

* err= 0.21963139558684305
* Learning rate NN = 0.0005904899444431067
* diff = 0.0011408320870220923

```



For scene 96/109

```

* use LR_NN=0.001 with err=21.98885390529783 at it=24
* v0_scn_mean = 32.53191096349226
* MAE = 0.21963139558684305

```

df n.1, scene n.97/109

We have 3 time intervals inside [363.44, 364.04]

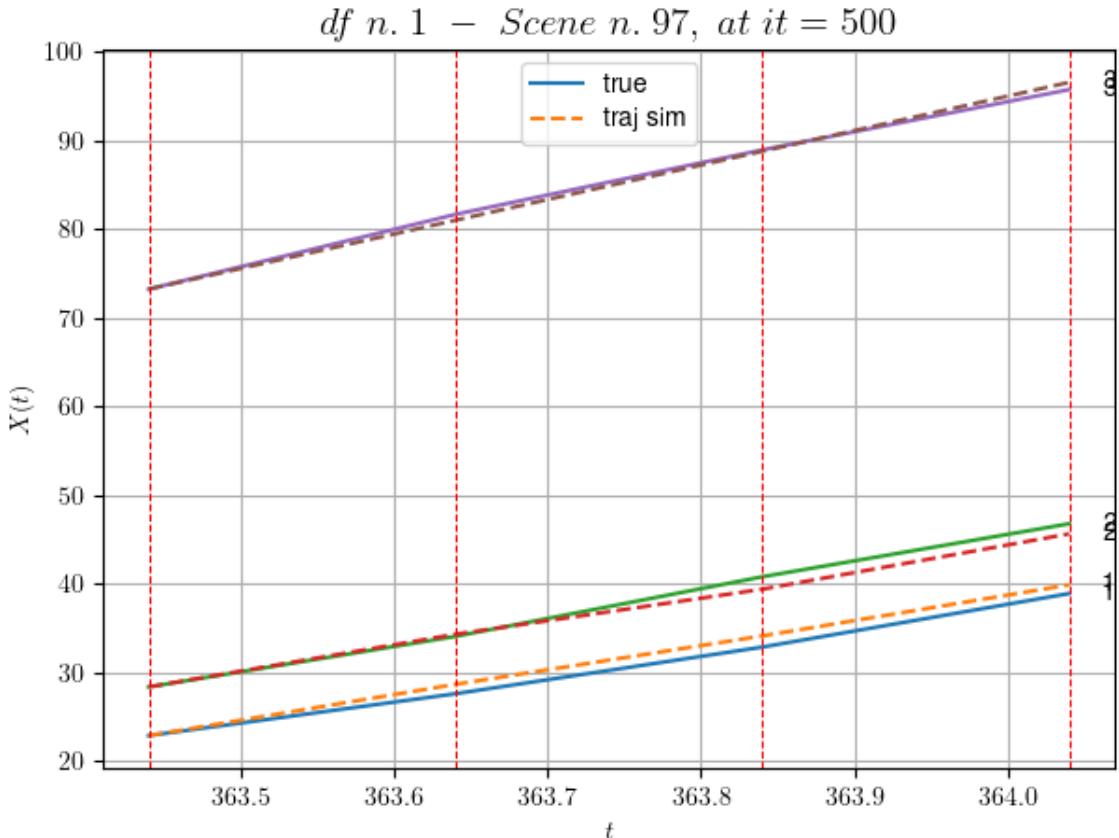
- Time interval n.0: [363.44, 363.64]
 - * y_true: [23.6502752 28.55056389]
 - * v_ann: [28.960159301757812, 29.760238647460938, 38.923494443014086]

- Time interval n.1: [363.64, 363.84]
 - * y_true: [26.3393983 33.66093634]
 - * v_ann: [27.31985092163086, 25.42999267578125, 38.923494443014086]

- Time interval n.2: [363.84, 364.04]
 - * y_true: [30.2407755 29.94110461]

```
* v_ann: [28.85076141357422, 31.26313591003418, 38.  
923494443014086]
```

```
-----  
* err= 0.6776343440536644  
* Learning rate NN = 0.0002952449722215533  
* diff = 0.00016067087070426034
```



For scene 97/109

```
* use LR_NN=0.0005 with err=22.973690017488252 at it=24  
* v0_scn_mean = 38.38808517707938  
* MAE = 0.5168062224348815
```

df n.1, scene n.98/109

We have 4 time intervals inside [386.64, 387.44]

- Time interval n.0: [386.64, 386.84]
 - * y_true: [28.15052447 34.1607672]
 - * v_ann: [32.3823356628418, 34.95115661621094, 39.3

4610016762172]

-
-
-
- Time interval n.1: [386.84, 387.04]
 - * y_true: [34.00091123 38.91120777]
 - * v_ann: [33.95880889892578, 32.64065933227539, 39.

34610016762172]

```

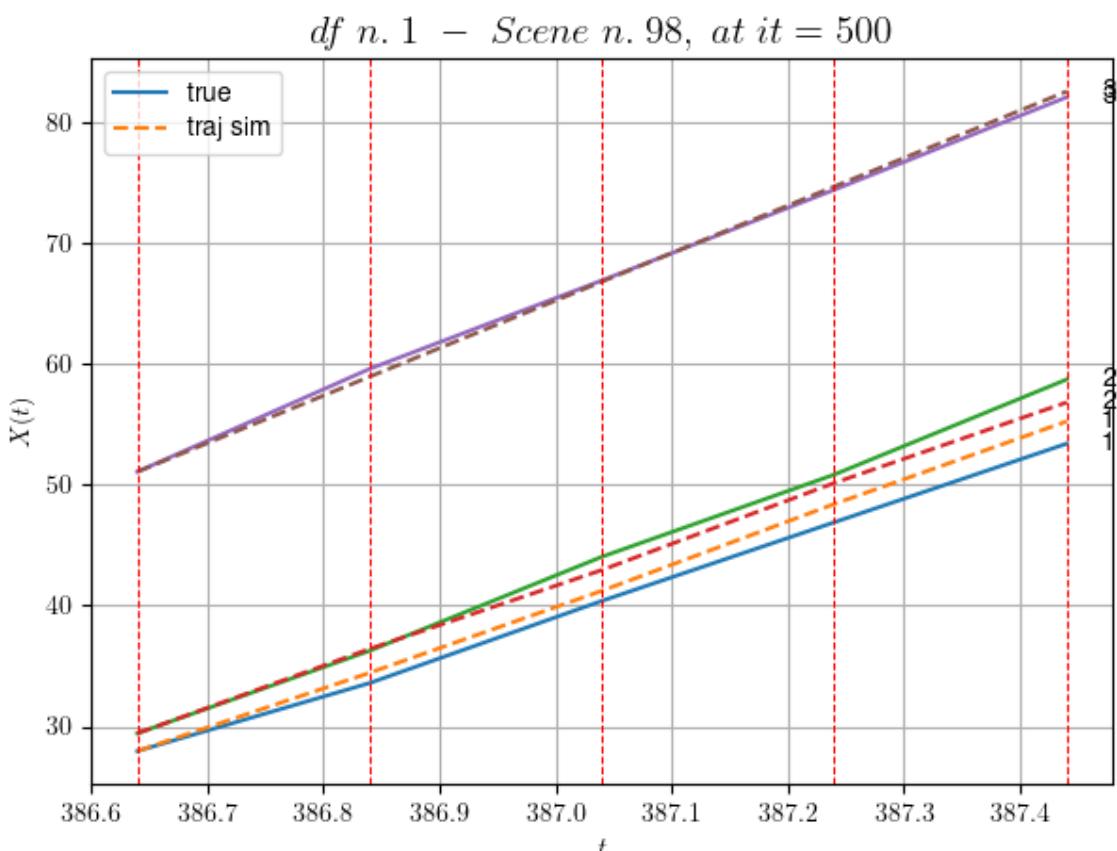
-----
- Time interval n.2: [387.04, 387.24]
  * y_true: [32.52639997 34.00151192]
  * v_ann: [35.88414764404297, 36.00590896606445, 39.
34610016762172]
-----
```

```

-----
- Time interval n.3: [387.24, 387.44]
  * y_true: [32.52639997 39.36234046]
  * v_ann: [34.192970275878906, 33.34741973876953, 3
9.34610016762172]
-----
```

```

* err= 0.8754773412959874
* Learning rate NN = 0.000478296831715852
* diff = 3.158463305197312e-05
```



For scene 98/109

```

* use LR_NN=0.001 with err=45.28486347748003 at it=24
* v0_scn_mean = 38.78533457718443
* MAE = 0.8753086324596069
```

df n.1, scene n.99/109

We have 2 time intervals inside [431.84, 432.24]

- Time interval n.0: [431.84, 432.04]

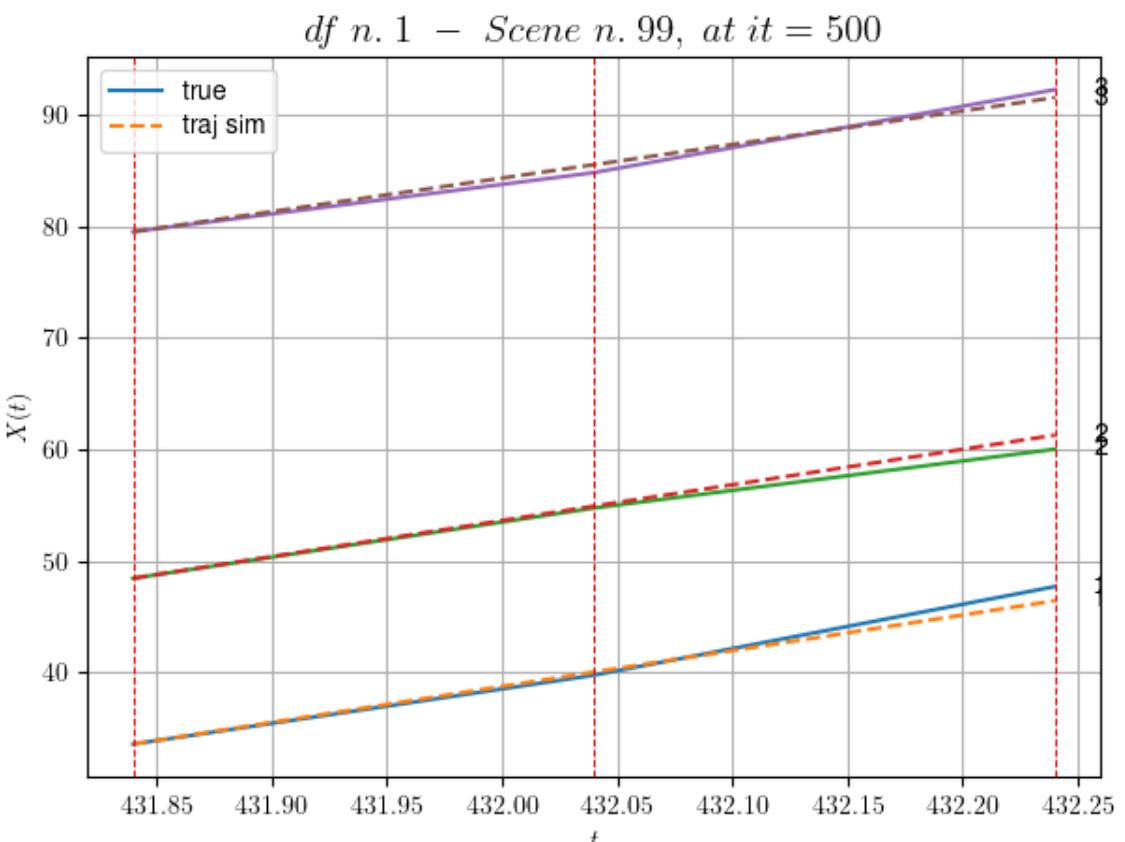
```

* y_true: [30.8908033 31.49166882]
* v_ann: [32.315635681152344, 32.375247955322266, 3
0.08416163618762]

-----
- Time interval n.1: [432.04, 432.24]
* y_true: [39.73151551 26.376716 ]
* v_ann: [31.953330993652344, 31.821237564086914, 3
0.08416163618762]

-----
* err= 0.4822552775119695
* Learning rate NN = 7.289998757187277e-05
* diff = 2.341786755788444e-06

```



For scene 99/109

```

* use LR_NN=0.0001 with err=7.244888255125292 at it=24
* v0_scn_mean = 30.079111941794874
* MAE = 0.48225521854186315

```

df n.1, scene n.100/109

```

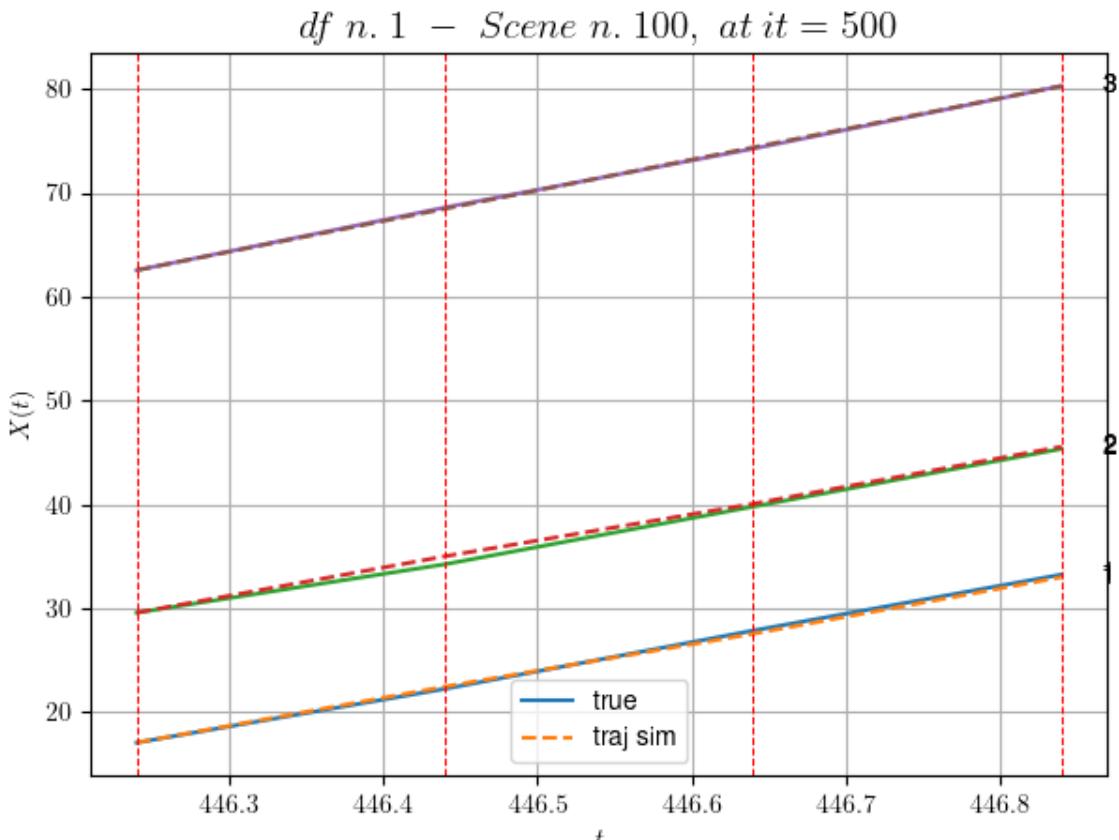
We have 3 time intervals inside [446.24,446.84]
- Time interval n.0: [446.24, 446.44]
* y_true: [25.89017971 23.30046083]
* v_ann: [26.978227615356445, 27.128828048706055, 2
9.55442920912587]

```

```
- Time interval n.1: [446.44, 446.64]
  * y_true: [28.05031625 27.72075411]
  * v_ann: [25.421537399291992, 25.27508544921875, 2
9.55442920912587]
```

```
- Time interval n.2: [446.64, 446.84]
  * y_true: [26.94045507 27.8009832 ]
  * v_ann: [27.21125030517578, 27.49078369140625, 29.
55442920912587]
```

```
* err= 0.07912026532739588  
* Learning rate NN = 0.0002952449722215533  
* diff = 1.6165924205432947e-05
```



For scene 100/109

* use LR_NN=0.0005 with err=11.342798040953468 at it=24
* vθ_scn_mean = 29.58116343657342
* MAF = 0.07430049378686075

def n_1 score_n_1 101/100

We have 3 time intervals inside [447.44, 448.04]

```

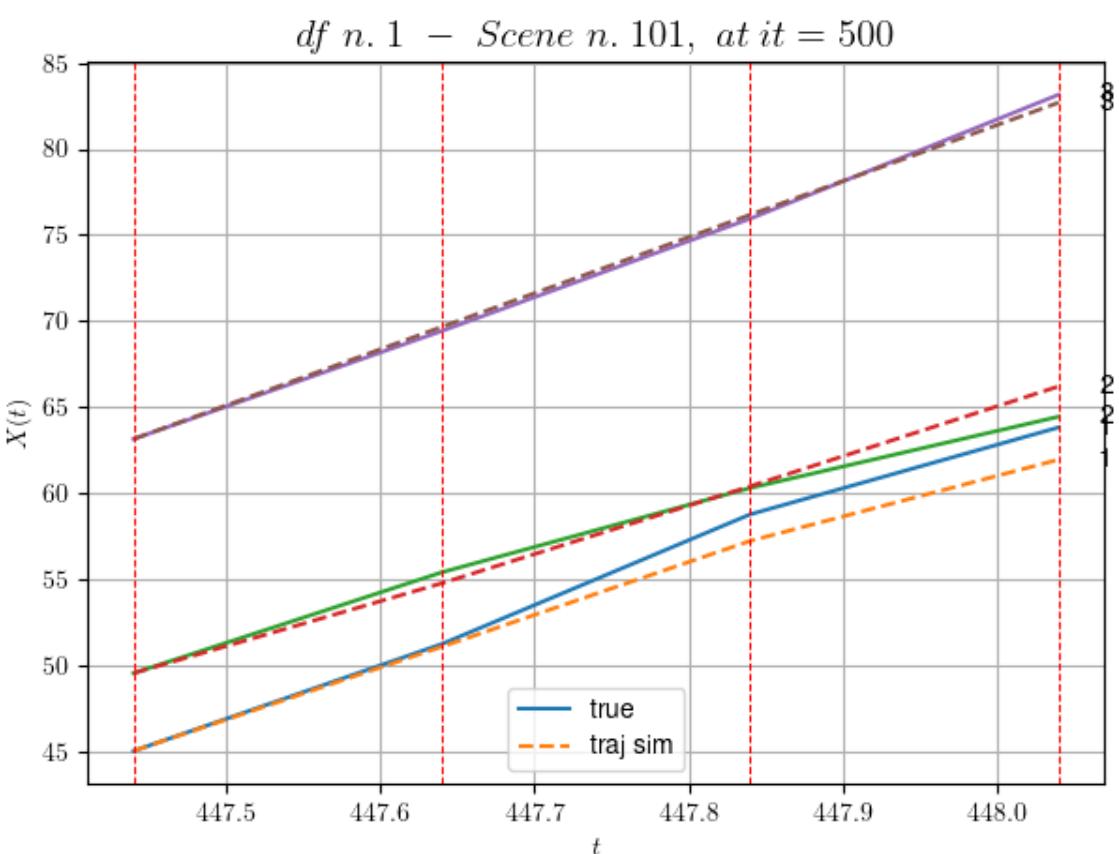
    - Time interval n.0: [447.44, 447.64]
      * y_true: [31.0713577 29.31148494]
      * v_ann: [30.30313491821289, 26.13574981689453, 32.
58486004517738]

-----
    - Time interval n.1: [447.64, 447.84]
      * y_true: [37.68225285 24.50151408]
      * v_ann: [30.736600875854492, 28.173389434814453, 3
2.58486004517738]

-----
    - Time interval n.2: [447.84, 448.04]
      * y_true: [25.261801 20.71149408]
      * v_ann: [23.609966278076172, 29.016597747802734, 3
2.58486004517738]

* err= 0.8121665086842915
* Learning rate NN = 0.0005904899444431067
* diff = 0 AA76A4520047452929

```



For scene 101/109

```

* use LR_NN=0.001 with err=22.020403822522173 at it=24
* v0_scn_mean = 32.429768558521445
* MAE = 0.7980211908836669

```

```
df n.1, scene n.102/109
```

```
=====
=====
```

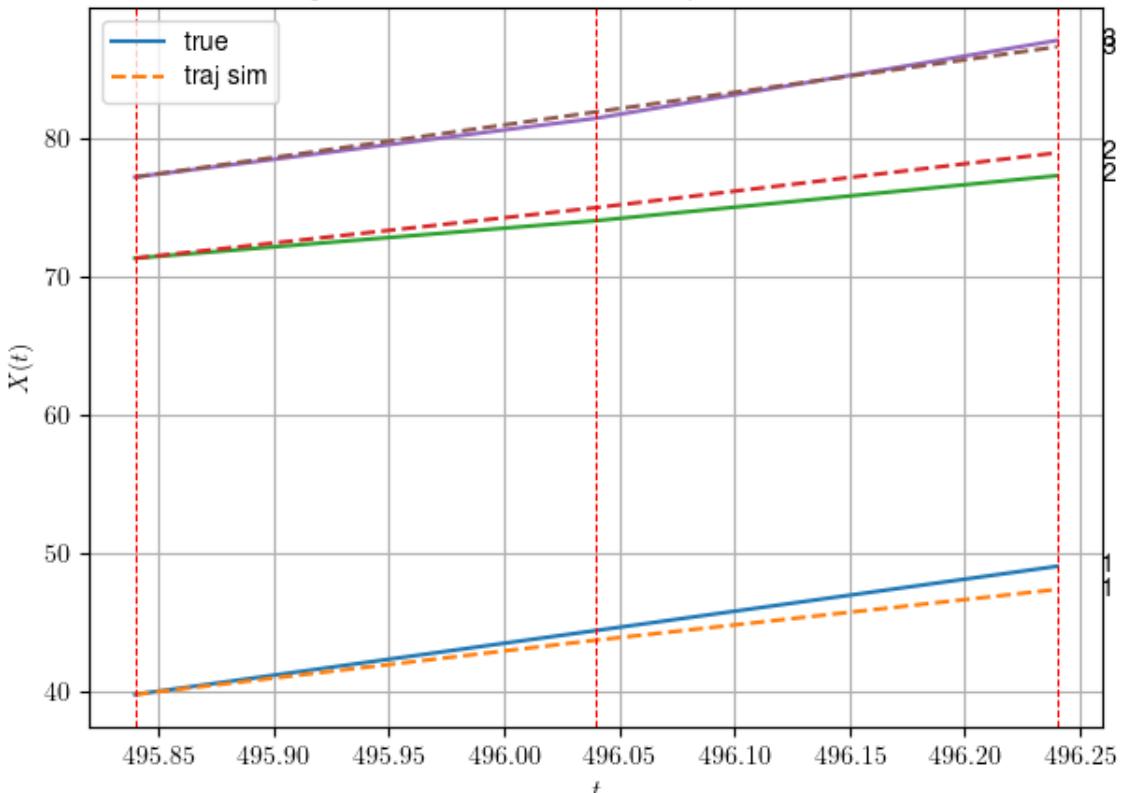
We have 2 time intervals inside [495.84, 496.24]

- Time interval n.0: [495.84, 496.04]
 - * y_true: [23.1307843 13.57637571]
 - * v_ann: [19.647747039794922, 18.28988265991211, 2 3.563093490872173]

- Time interval n.1: [496.04, 496.24]
 - * y_true: [23.23098731 16.2618474]
 - * v_ann: [18.337860107421875, 19.843740463256836, 2 3.563093490872173]

- * err= 0.817156986290838
- * Learning rate NN = 0.0007289999630302191
- * ~~diff = 0.00171300023050226 0E~~

df n. 1 – Scene n. 102, at it = 500



For scene 102/109

- * use LR_NN=0.001 with err=2.337509697617015 at it=24
- * v0_scn_mean = 23.94930759241688
- * MAE = 0.8041228592278343

```
=====
=====
```

df n.1, scene n.103/109

```
=====
=====
```

We have 4 time intervals inside [496.84, 497.64]

```

    - Time interval n.0: [496.84, 497.04]
      * y_true: [19.47545433 17.05100655]
      * v_ann: [18.21773338317871, 17.78923988342285, 23.
671022130117436]

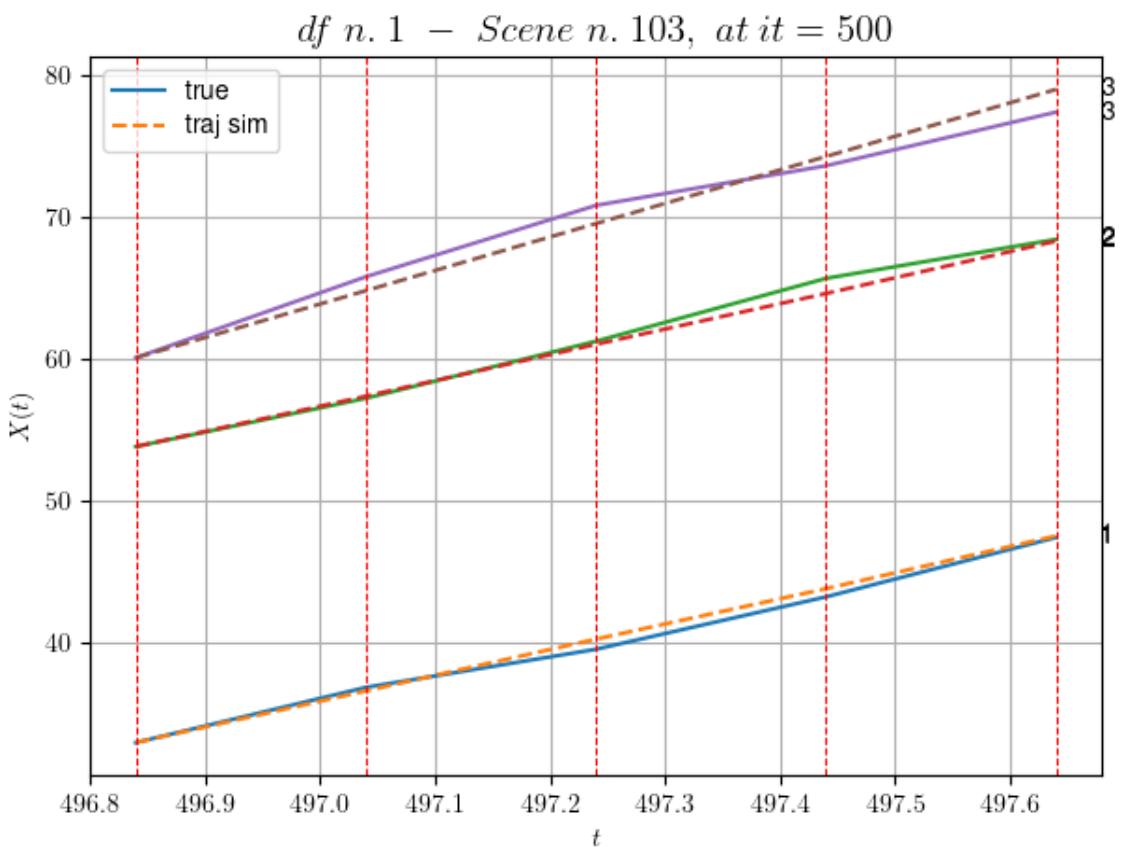
-----
    - Time interval n.1: [497.04, 497.24]
      * y_true: [13.44536038 20.12642582]
      * v_ann: [18.275339126586914, 18.289813995361328, 2
3.671022130117436]

-----
    - Time interval n.2: [497.24, 497.44]
      * y_true: [18.49565962 22.17670532]
      * v_ann: [17.821386337280273, 17.940690994262695, 2
3.671022130117436]

-----
    - Time interval n.3: [497.44, 497.64]
      * y_true: [20.96085077 13.7761341 ]
      * v_ann: [18.618385314941406, 18.490482330322266, 2
3.671022130117436]

* err= 0.5168359848312649
* Learning rate NN = 0.000239148415857926
* diff = 3.815695811115738e-05

```



For scene 103/109
* use LR_NN=0.0005 with err=13.161964627193258 at it=24

```
* vθ_scn_mean = 24.05076051815319
* MAE = 0.5167170619526275
```

```
df n.1, scene n.104/109
```

We have 2 time intervals inside [499.04, 499.44]

- Time interval n.0: [499.04, 499.24]

- * y_true: [23.84103851 15.32650765]

- * v_ann: [22.222244262695312, 21.407052993774414, 1
7.832163517131047]

- Time interval n.1: [499.24, 499.44]

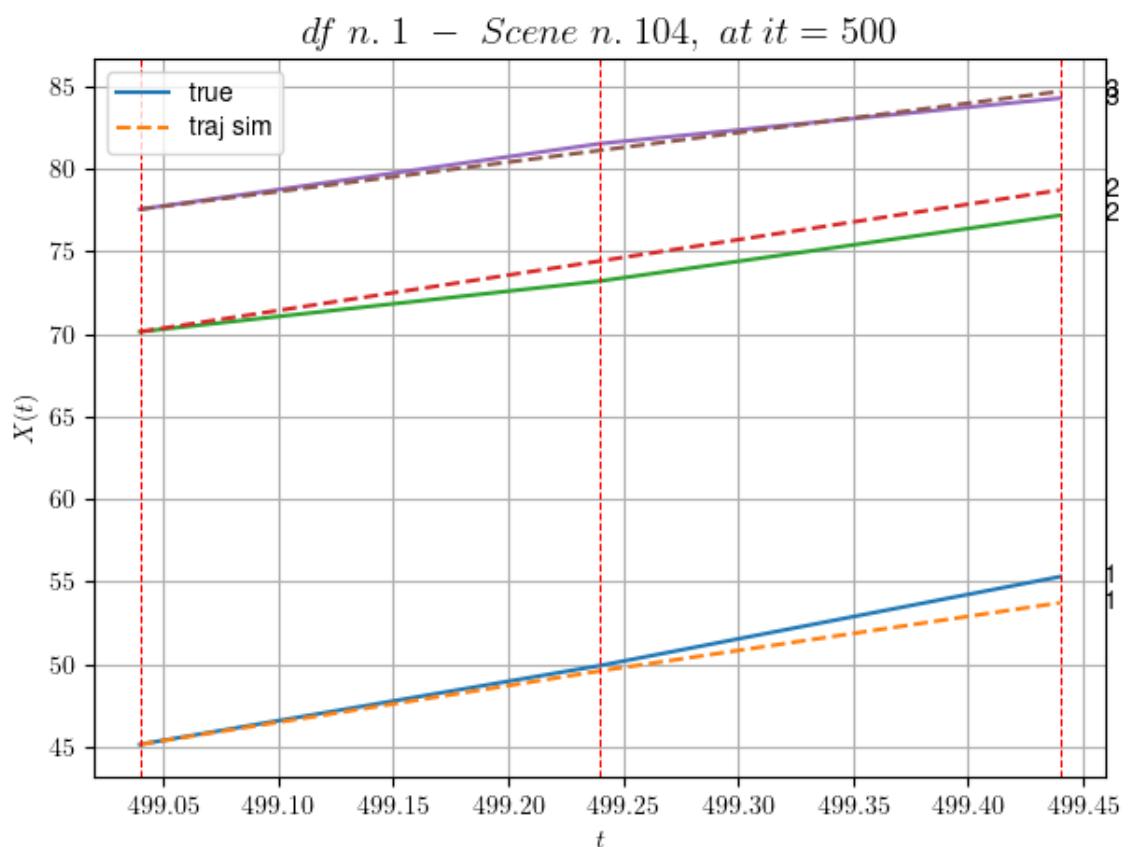
- * y_true: [26.92142921 19.88726092]

- * v_ann: [20.639026641845703, 21.459266662597656, 1
7.832163517131047]

- * err= 0.7507044731636808

- * Learning rate NN = 0.00036449998151510954

- * diff = 0.0016108963702244905



For scene 104/109

- * use LR_NN=0.0005 with err=4.9245211702380525 at it=24

- * vθ_scn_mean = 18.562233159793667

- * MAE = 0.7344191753426413

```
=====
```

```
=====
```

```
df n.1, scene n.105/109
```

```
=====
```

```
=====
```

```
We have 2 time intervals inside [500.64,501.04]
```

```
- Time interval n.0: [500.64, 500.84]
```

```
* y_true: [16.2004483 16.13562888]
```

```
* v_ann: [17.88783073425293, 18.466552734375, 12.36
```

```
1370218693585]
```

```
=====
```

```
- Time interval n.1: [500.84, 501.04]
```

```
* y_true: [18.900675 17.67575332]
```

```
* v_ann: [16.505647659301758, 15.790214538574219, 1
```

```
2.361370218693585]
```

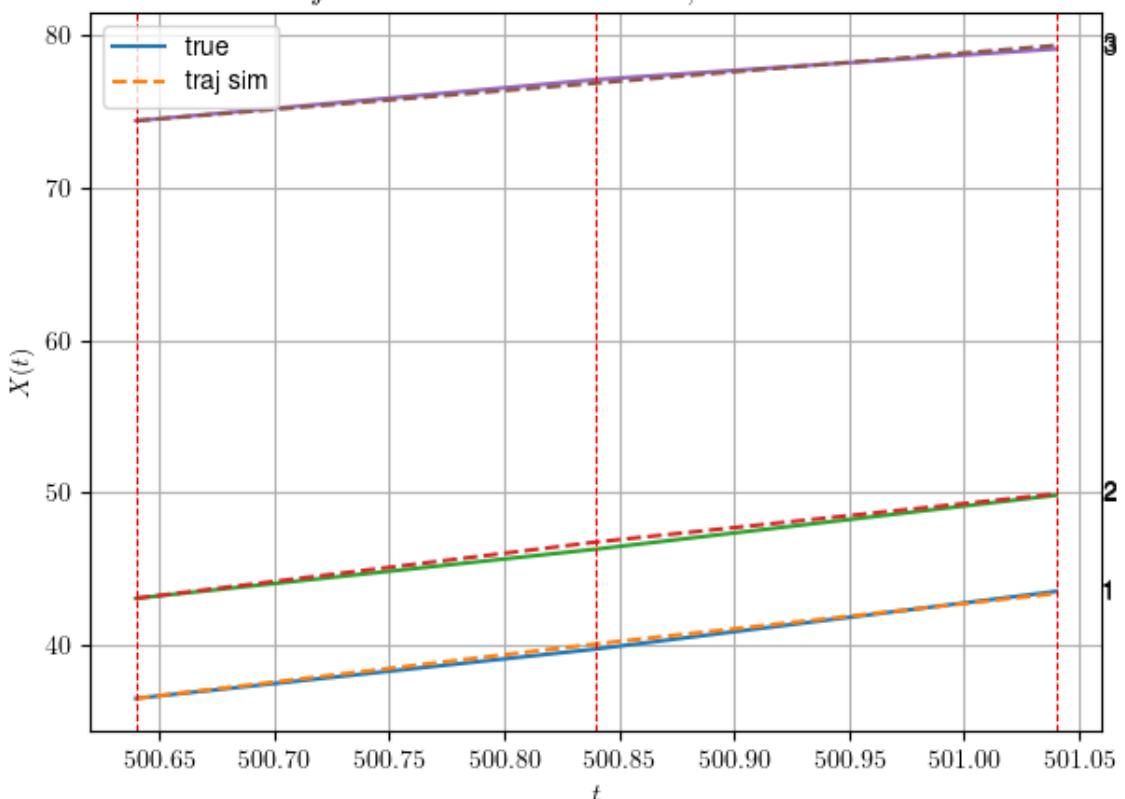
```
=====
```

```
* err= 0.051769150783330074
```

```
* Learning rate NN = 0.0007289999630302191
```

```
* diff = 4.033251770516749e-05
```

df n. 1 – Scene n. 105, at it = 500



```
For scene 105/109
```

```
* use LR_NN=0.001 with err=10.881194220392237 at it=24
```

```
* v0_scn_mean = 13.419687213635964
```

```
* MAE = 0.05048616792541538
```

```
=====
```

```
=====
```

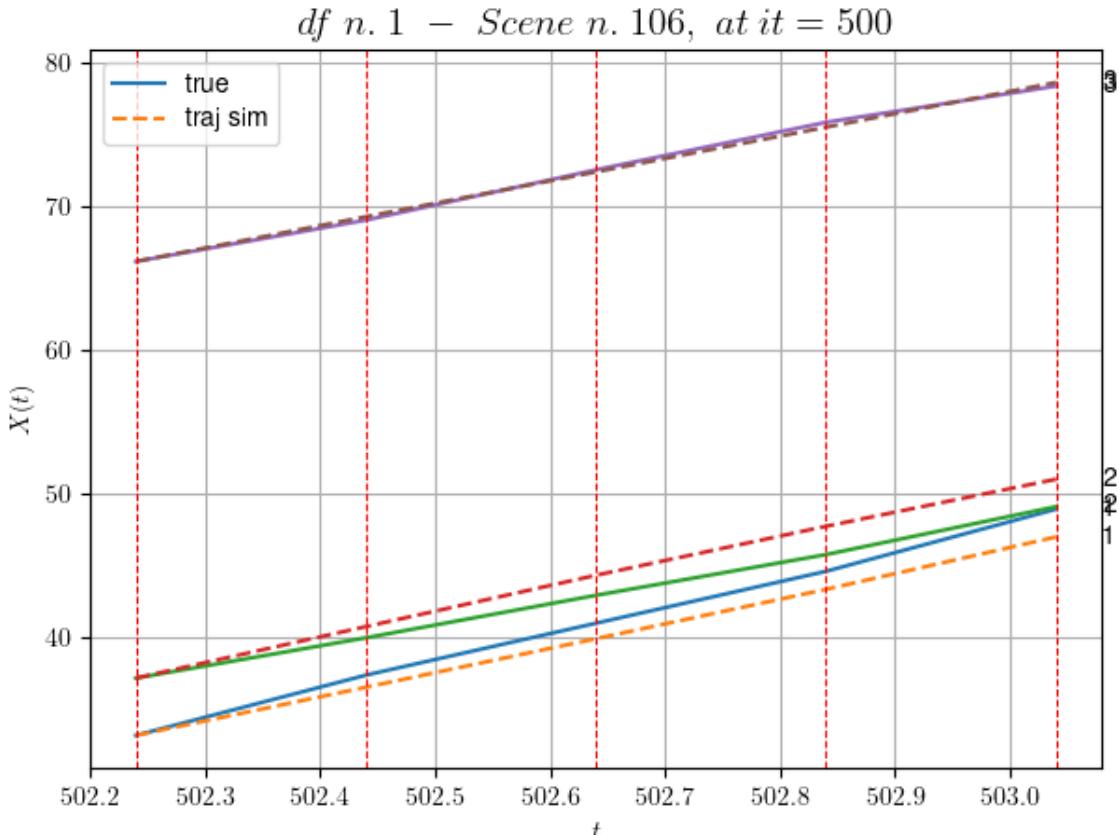
```
df n.1, scene n.106/109
=====
=====
    We have 4 time intervals inside [502.24,503.04]
        - Time interval n.0: [502.24, 502.44]
            * y_true: [20.97545504 14.04040867]
            * v_ann: [16.761566162109375, 17.93793487548828, 1
5.581016722933649]

-----
        - Time interval n.1: [502.44, 502.64]
            * y_true: [18.07559412 14.7904947 ]
            * v_ann: [16.900924682617188, 17.876758575439453, 1
5.581016722933649]

-----
        - Time interval n.2: [502.64, 502.84]
            * y_true: [18.07559412 14.18054394]
            * v_ann: [17.182767868041992, 17.048616409301758, 1
5.581016722933649]

-----
        - Time interval n.3: [502.84, 503.04]
            * y_true: [21.64181695 16.68485314]
            * v_ann: [18.24028778076172, 16.391942977905273, 1
5.581016722933649]

-----
    * err= 1.170489434548029
    * Learning rate NN = 0.000478296831715852
    * diff = 0.00000000001101151
```



For scene 106/109

- * use LR_NN=0.001 with err=33.93019605019812 at it=24
- * v0_scn_mean = 16.446155072176932
- * MAE = 1.1355511585859683

df n.1, scene n.107/109

We have 2 time intervals inside [534.84, 535.24]

- Time interval n.0: [534.84, 535.04]
 - * y_true: [8.93323515 20.37071651]
 - * v_ann: [17.54691505432129, 18.78649139404297, 29.

753482357834233]

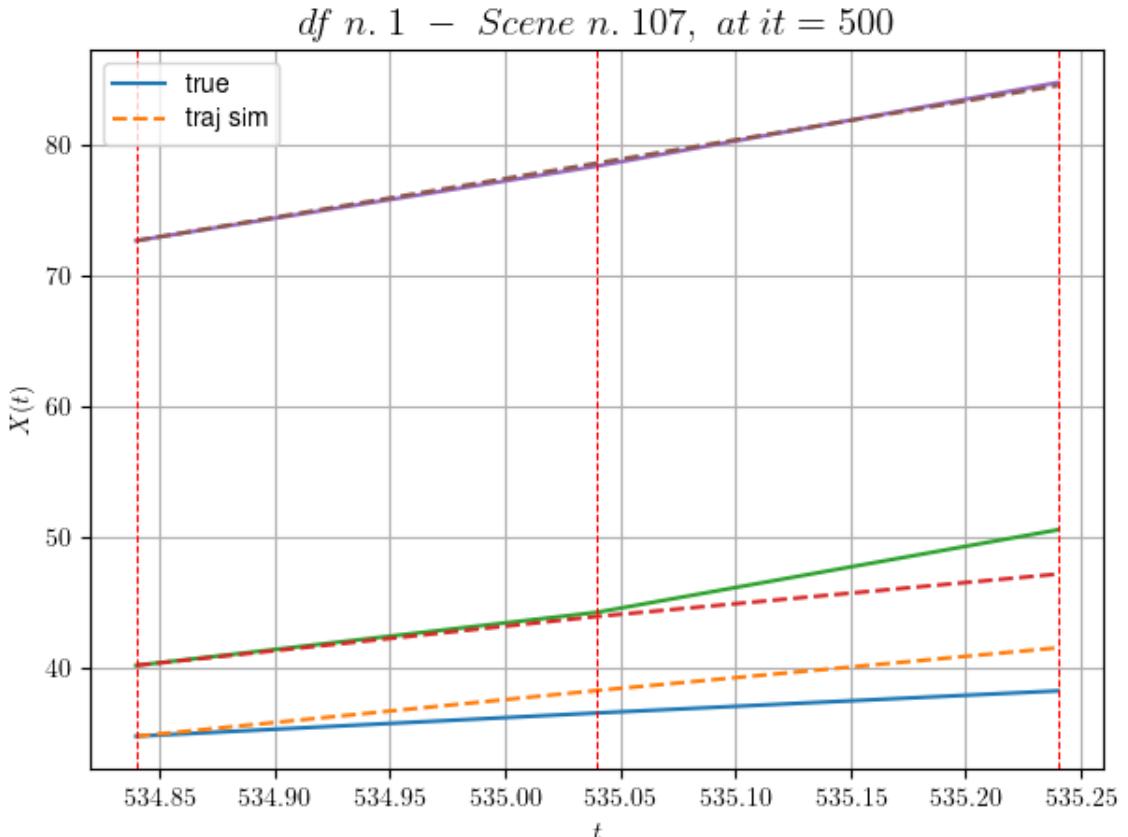
- Time interval n.1: [535.04, 535.24]
 - * y_true: [8.47527286 31.64140498]
 - * v_ann: [16.386077880859375, 16.257219314575195, 2

9.753482357834233]

- * err= 2.8459435686387526

- * Learning rate NN = 0.00036449998151510954

- * diff = 3.635313800742779e-05



For scene 107/109

```
* use LR_NN=0.0005 with err=1.2140473108809273 at it=24
* v0_scn_mean = 29.76827340529707
* MAE = 2.722594491666284
```

df n.1, scene n.108/109

We have 3 time intervals inside [573.84, 574.44]

- Time interval n.0: [573.84, 574.04]
 - * y_true: [20.07571717 13.74586409]
 - * v_ann: [13.703583717346191, 14.051362037658691,

9.33871966090743]

- Time interval n.1: [574.04, 574.24]
 - * y_true: [13.45064024 11.92582032]
 - * v_ann: [13.829564094543457, 14.230290412902832,

9.33871966090743]

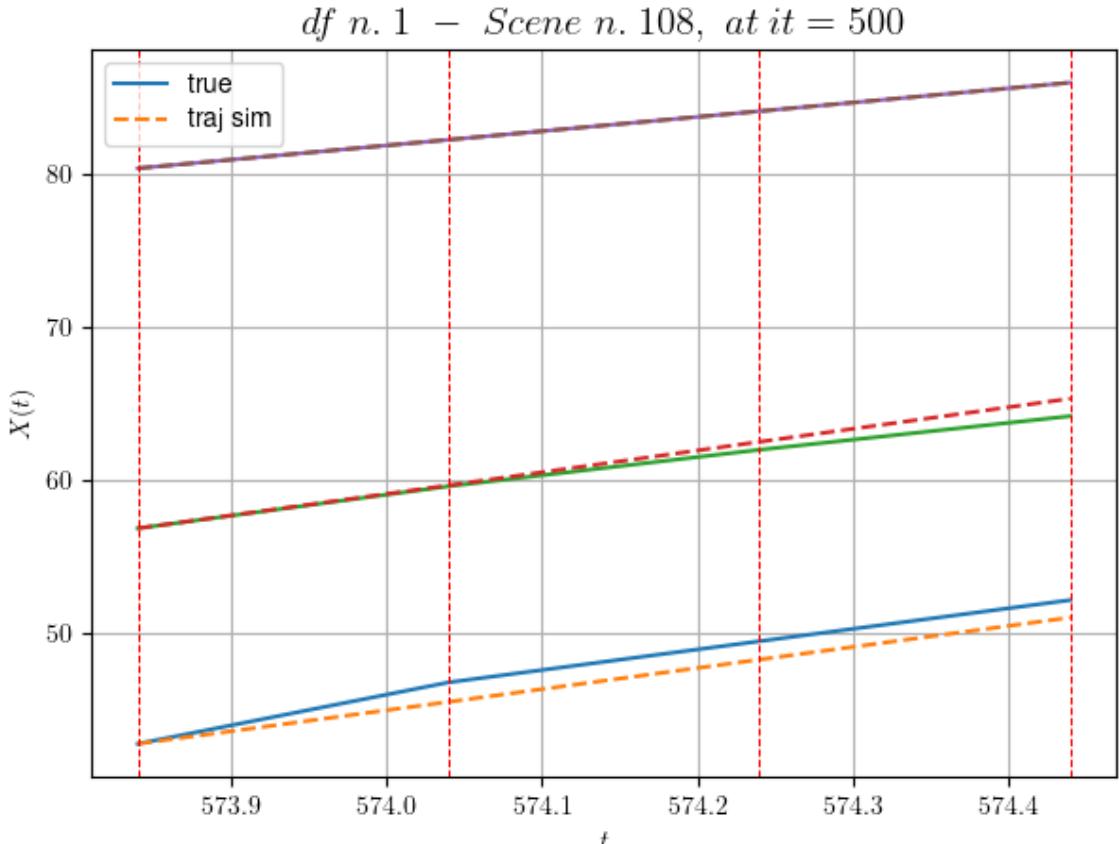
- Time interval n.2: [574.24, 574.44]
 - * y_true: [13.45064024 11.00083908]
 - * v_ann: [13.74086856842041, 14.115978240966797, 9.

33871966090743]

```

* err= 0.4957625194012248
* Learning rate NN = 5.904899080633186e-05
* diff = 0.00394085138866207

```



For scene 108/109

```

* use LR_NN=0.0001 with err=22.861685763763806 at it=24
* v0_scn_mean = 10.578395553605965
* MAE = 0.42959662449684966

```

For df=1 with 109 scenes, time taken: 1687.14

In df n.2/10 we have 69 scenes

df n.2, scene n.0/69

We have 5 time intervals inside [13.16, 14.16]

- Time interval n.0: [13.16, 13.36]
 - * y_true: [14.81021865]
 - * v_ann: [12.474159240722656, 24.635349855264995]

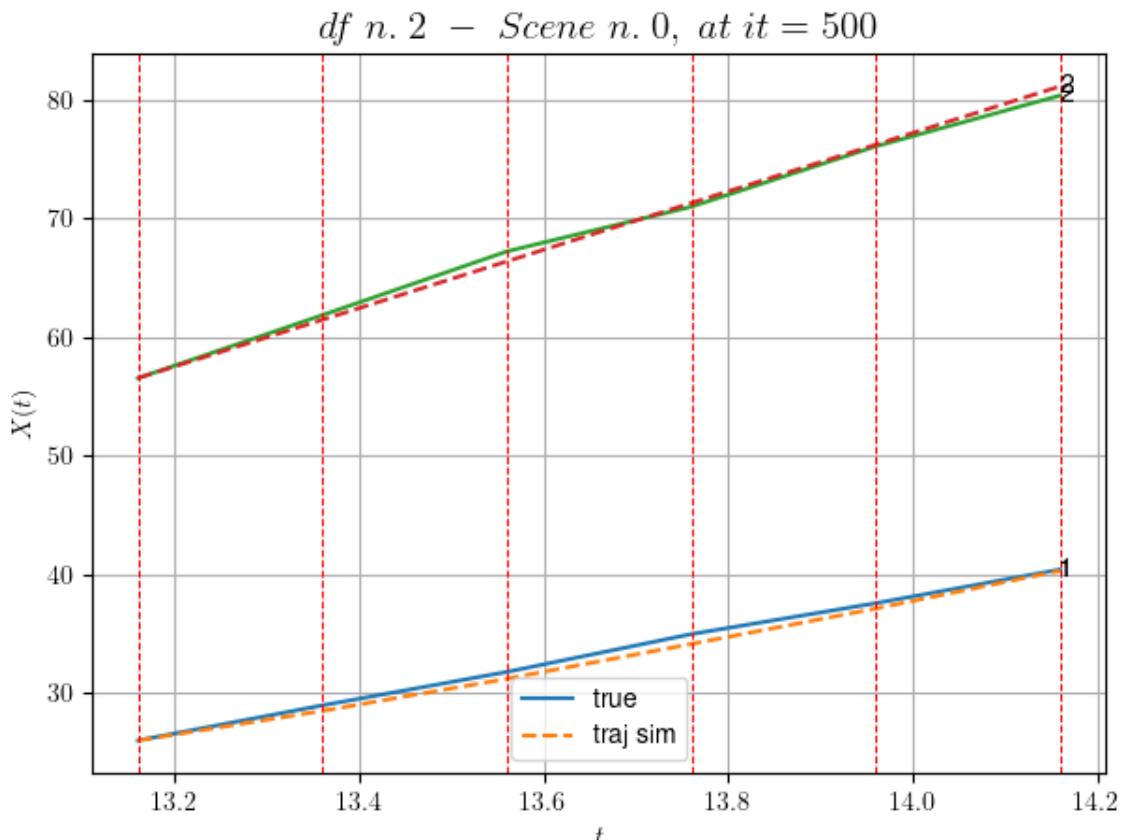
- Time interval n.1: [13.36, 13.56]
 - * y_true: [14.11025668]
 - * v_ann: [13.560140609741211, 24.635349855264995]

```
- Time interval n.2: [13.56, 13.76]
* y_true: [15.96034483]
* v_ann: [14.669048309326172, 24.635349855264995]
```

```
- Time interval n.3: [13.76, 13.96]
* y_true: [13.04033517]
* v_ann: [14.98072338104248, 24.635349855264995]
```

```
- Time interval n.4: [13.96, 14.16]
* y_true: [14.25042294]
* v_ann: [15.932339668273926, 24.635349855264995]
```

```
* err= 0.25365608509454385
* Learning rate NN = 1.9371018424862996e-05
* diff = 0.0006656488592251542
```



For scene 0/69

```
* use LR_NN=5e-05 with err=6.1256077691714355 at it=24
* v0_scn_mean = 24.84993586101339
* MAE = 0.25259967999265515
```

df n.2, scene n.1/69

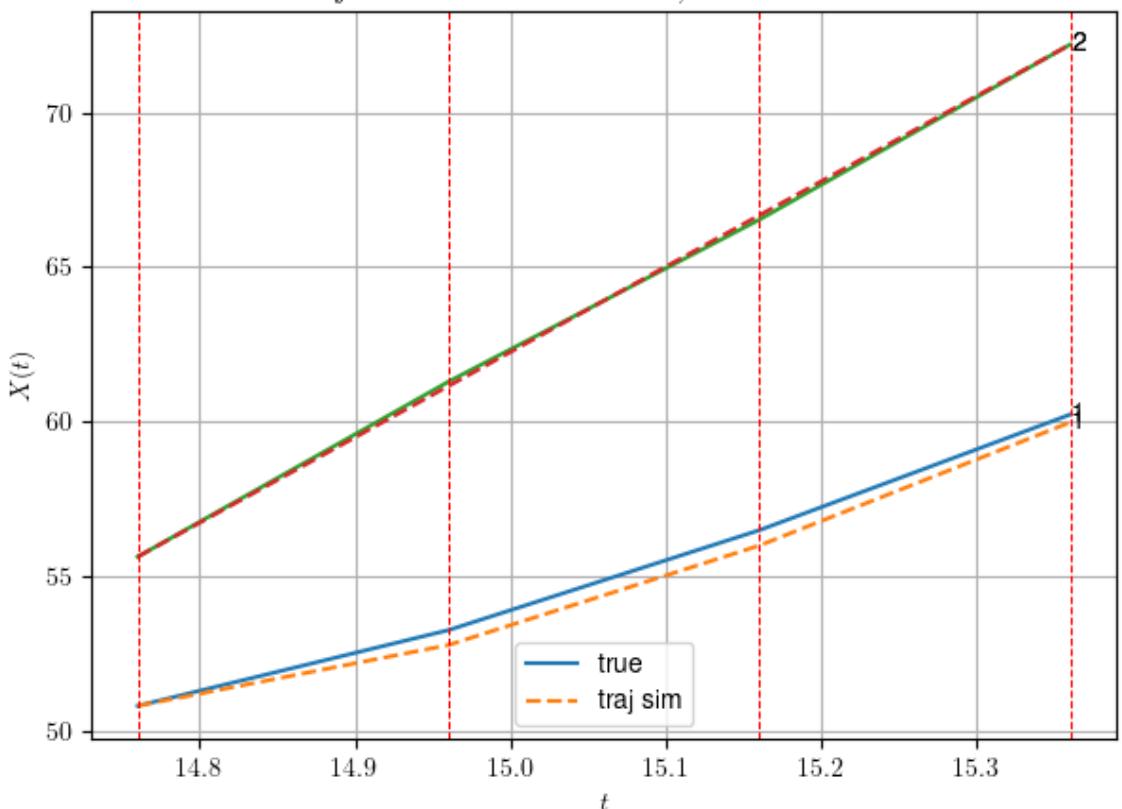
```
=====
=====
We have 3 time intervals inside [14.76,15.36]
- Time interval n.0: [14.76, 14.96]
  * y_true: [12.25064682]
  * v_ann: [9.8424072265625, 27.615406088656982]
```

```
=====
- Time interval n.1: [14.96, 15.16]
  * y_true: [16.16094924]
  * v_ann: [16.086280822753906, 27.615406088656982]
```

```
=====
- Time interval n.2: [15.16, 15.36]
  * y_true: [18.71122804]
  * v_ann: [19.928119659423828, 27.615406088656982]
```

```
=====
* err= 0.07282993099359608
* Learning rate NN = 0.0002952449722215533
* diff = 0 AA2739208825370376
```

df n. 2 – Scene n. 1, at it = 500



```
For scene 1/69
* use LR_NN=0.0005 with err=0.49450970594437427 at it=24
* v0_scn_mean = 27.710789845092453
* MAE = 0.07282993099359608
```

```
df n.2, scene n.2/69
```

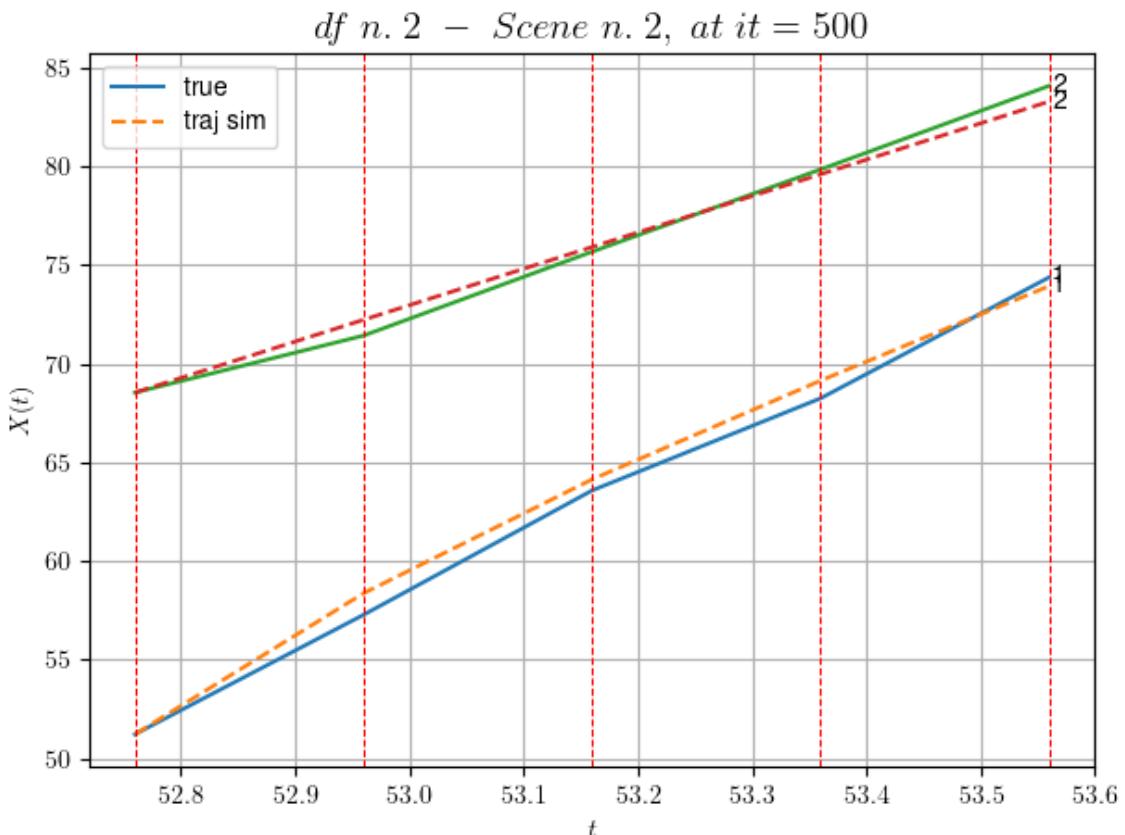
```
=====
We have 4 time intervals inside [52.76,53.56]
- Time interval n.0: [52.76, 52.96]
  * y_true: [30.25172942]
  * v_ann: [35.705238342285156, 18.434937295304408]
```

```
-----
- Time interval n.1: [52.96, 53.16]
  * y_true: [31.50223079]
  * v_ann: [28.849323272705078, 18.434937295304408]
```

```
-----
- Time interval n.2: [53.16, 53.36]
  * y_true: [23.35196402]
  * v_ann: [25.033967971801758, 18.434937295304408]
```

```
-----
- Time interval n.3: [53.36, 53.56]
  * y_true: [30.65301597]
  * v_ann: [23.956209182739258, 18.434937295304408]
```

```
* err= 0.38923264361834664
* Learning rate NN = 4.7829678806010634e-05
* diff = 0.0004656474157357371
```



For scene 2/69

* use LR_NN=0.0001 with err=15.28539901889674 at it=24
 * v0_scn_mean = 18.897539803403795

* MAE = 0.38587849961770204

=====

df n.2, scene n.3/69

=====

We have 4 time intervals inside [54.56, 55.36]

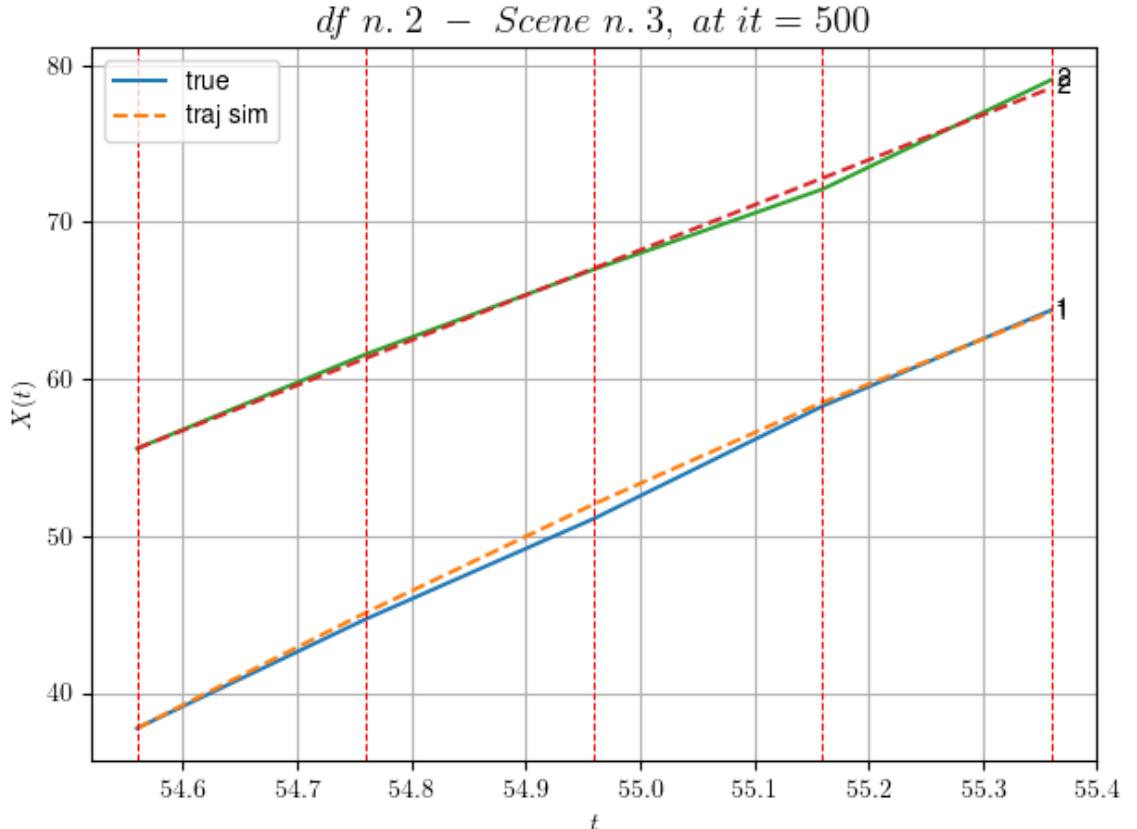
- Time interval n.0: [54.56, 54.76]
 - * y_true: [34.74114002]
 - * v_ann: [36.79230880737305, 28.7163213096498]

- Time interval n.1: [54.76, 54.96]
 - * y_true: [32.07140907]
 - * v_ann: [34.651405334472656, 28.7163213096498]

- Time interval n.2: [54.96, 55.16]
 - * y_true: [35.83207283]
 - * v_ann: [32.39299392700195, 28.7163213096498]

- Time interval n.3: [55.16, 55.36]
 - * y_true: [30.55218752]
 - * v_ann: [28.692564010620117, 28.7163213096498]

- * err= 0.1937821224350158
- * Learning rate NN = 4.7829678806010634e-05
- * diff = 7.810740191077636e-05



For scene 3/69

- * use LR_NN=0.0001 with err=0.42868730997906657 at it=24
- * v0_scn_mean = 28.767668457254015
- * MAE = 0.19201263103966698

df n.2, scene n.4/69

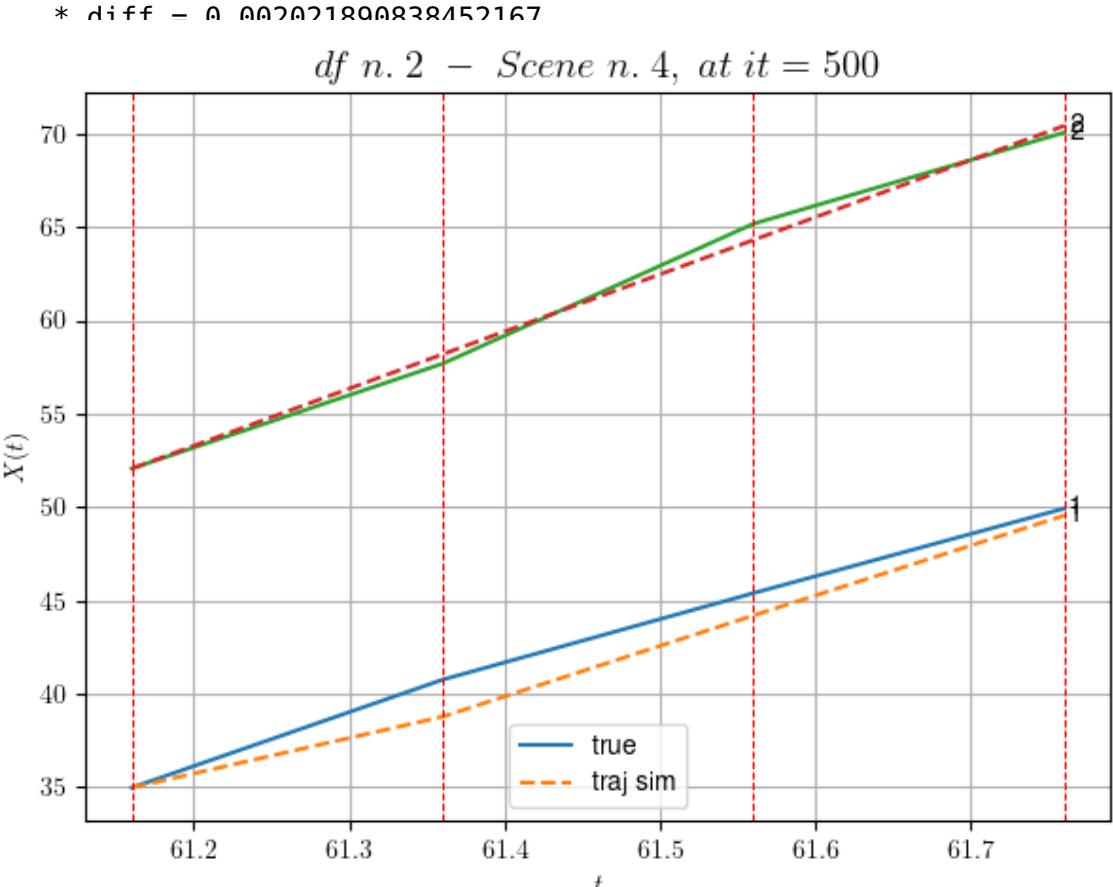
We have 3 time intervals inside [61.16,61.76]

- Time interval n.0: [61.16, 61.36]
 - * y_true: [28.89080545]
 - * v_ann: [18.985687255859375, 30.583768746275556]

- Time interval n.1: [61.36, 61.56]
 - * y_true: [23.17083447]
 - * v_ann: [27.097179412841797, 30.583768746275556]

- Time interval n.2: [61.56, 61.76]
 - * y_true: [22.65102829]
 - * v_ann: [26.74807357788086, 30.583768746275556]

- * err= 0.8292354389635348
- * Learning rate NN = 0.0005904899444431067



For scene 4/69

```
* use LR_NN=0.001 with err=0.4928880263602054 at it=24
* v0_scn_mean = 30.560417996429372
* MAE = 0.45571665224469643
```

df n.2, scene n.5/69

We have 8 time intervals inside [70.16, 71.76]

- Time interval n.0: [70.16, 70.36]
 - * y_true: [13.71005372]
 - * v_ann: [14.170504570007324, 24.741322770864876]

- Time interval n.1: [70.36, 70.56]
 - * y_true: [14.49007965]
 - * v_ann: [15.152165412902832, 24.741322770864876]

- Time interval n.2: [70.56, 70.76]
 - * y_true: [12.37009292]
 - * v_ann: [16.131031036376953, 24.741322770864876]

- Time interval n.3: [70.76, 70.96]

```
* y_true: [14.04013356]
* v_ann: [17.2899112701416, 24.741322770864876]
```

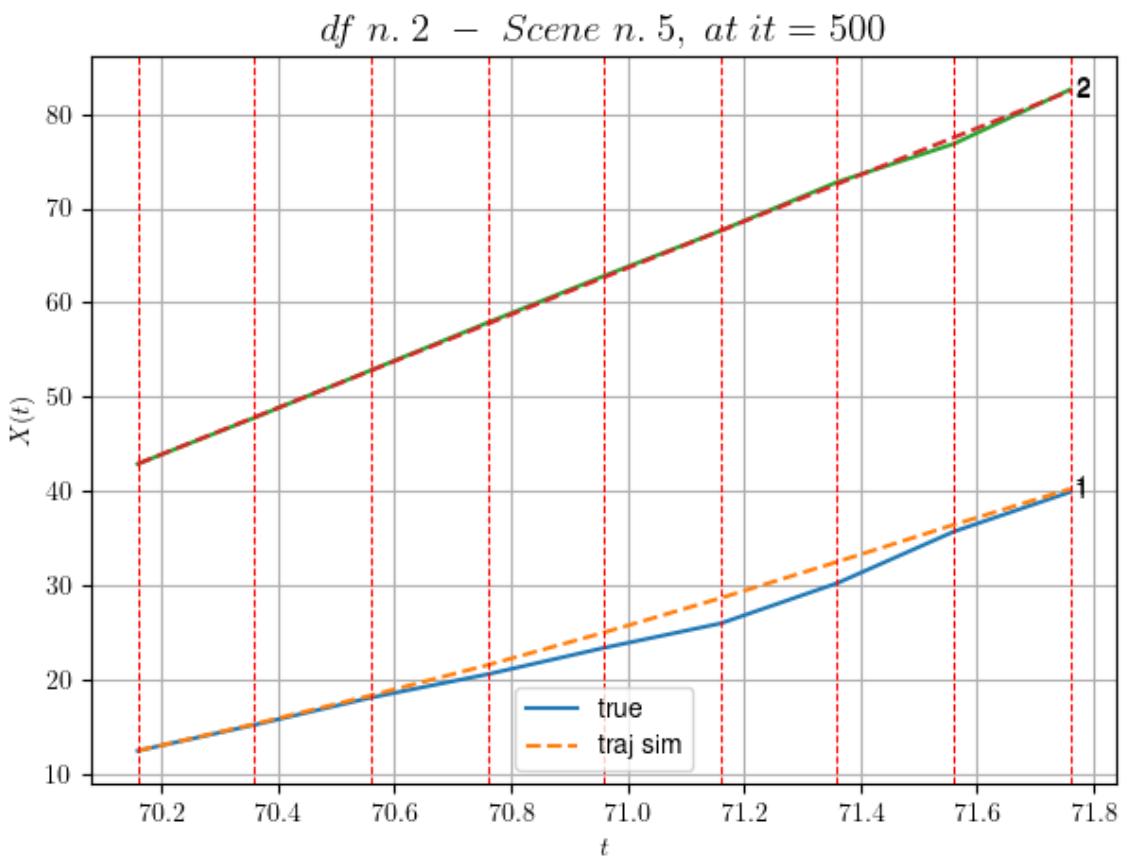
```
- Time interval n.4: [70.96, 71.16]
* y_true: [12.96015691]
* v_ann: [18.260189056396484, 24.741322770864876]
```

```
- Time interval n.5: [71.16, 71.36]
* y_true: [21.35447694]
* v_ann: [19.236024856567383, 24.741322770864876]
```

```
- Time interval n.6: [71.36, 71.56]
* y_true: [27.36057802]
* v_ann: [19.656583786010742, 24.741322770864876]
```

```
- Time interval n.7: [71.56, 71.76]
* y_true: [21.04057885]
* v_ann: [19.05923843383789, 24.741322770864876]
```

```
* err= 0.9556697618665625
* Learning rate NN = 2.058910467894748e-06
* diff = 0.004030526189640171
```



For scene 5/69

```
* use LR_NN=1e-05 with err=13.718902237727434 at it=24
* v0_scn_mean = 24.95166985999005
* MAE = 0.9532403405251432
```

```
=====
```

df n.2, scene n.6/69

```
=====
```

```
We have 6 time intervals inside [77.56, 78.76]
- Time interval n.0: [77.56, 77.76]
  * y_true: [21.77061473]
  * v_ann: [27.411100387573242, 14.529876108312925]
```

```
-----
```

```
- Time interval n.1: [77.76, 77.96]
  * y_true: [26.75095459]
  * v_ann: [26.55341148376465, 14.529876108312925]
```

```
-----
```

```
- Time interval n.2: [77.96, 78.16]
  * y_true: [19.2308048]
  * v_ann: [23.64542007446289, 14.529876108312925]
```

```
-----
```

```
- Time interval n.3: [78.16, 78.36]
  * y_true: [20.98109156]
  * v_ann: [21.34711456298828, 14.529876108312925]
```

```
-----
```

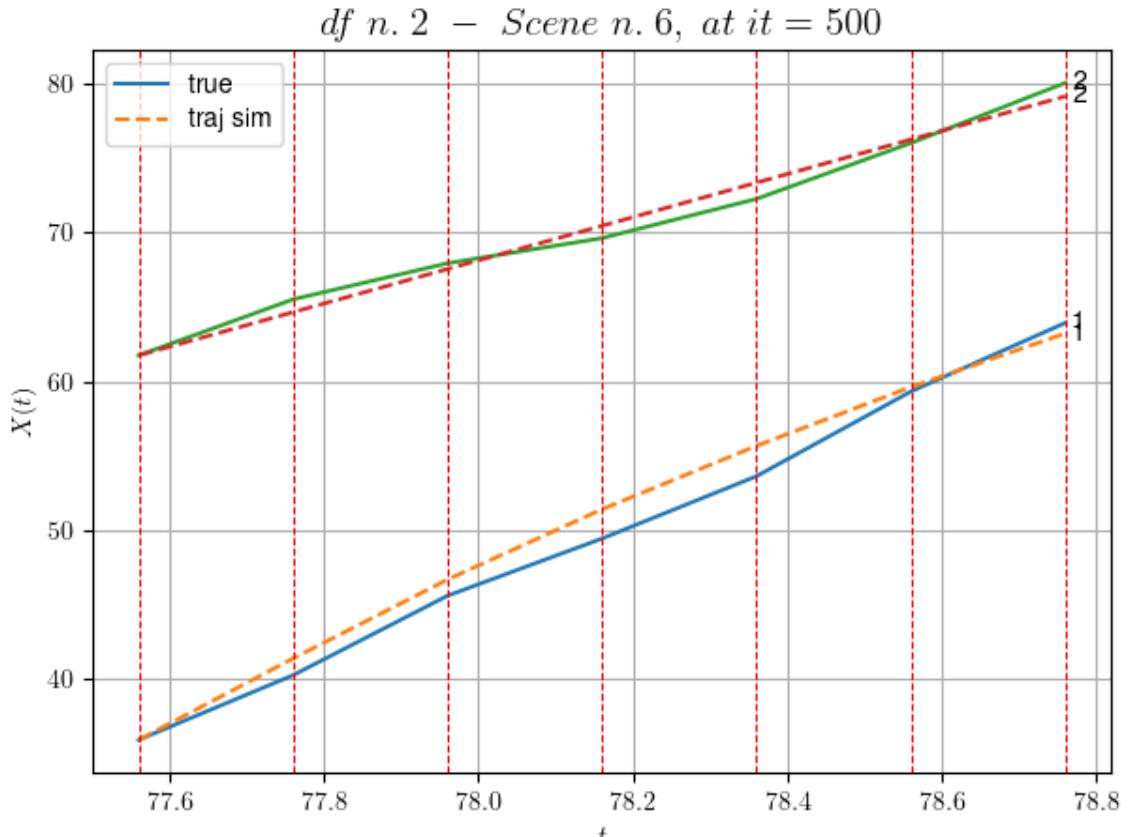
```
- Time interval n.4: [78.36, 78.56]
  * y_true: [28.51175595]
  * v_ann: [19.79375457763672, 14.529876108312925]
```

```
-----
```

```
- Time interval n.5: [78.56, 78.76]
  * y_true: [23.121652]
  * v_ann: [18.066181182861328, 14.529876108312925]
```

```
-----
```

```
* err= 1.0553384858219599
* Learning rate NN = 1.5690524378442205e-05
* diff = 0.003398671857178348
```



For scene 6/69

- * use LR_NN=5e-05 with err=63.797149481840364 at it=24
- * v0_scn_mean = 15.148681063862165
- * MAE = 1.052460550778567

df n.2, scene n.7/69

We have 5 time intervals inside [84.96, 85.96]

- Time interval n.0: [84.96, 85.16]
 - * y_true: [14.95056422]
 - * v_ann: [15.138293266296387, 24.168678500842805]

- Time interval n.1: [85.16, 85.36]
 - * y_true: [15.66066483]
 - * v_ann: [14.80659008026123, 24.168678500842805]

- Time interval n.2: [85.36, 85.56]
 - * y_true: [13.67066032]
 - * v_ann: [14.627094268798828, 24.168678500842805]

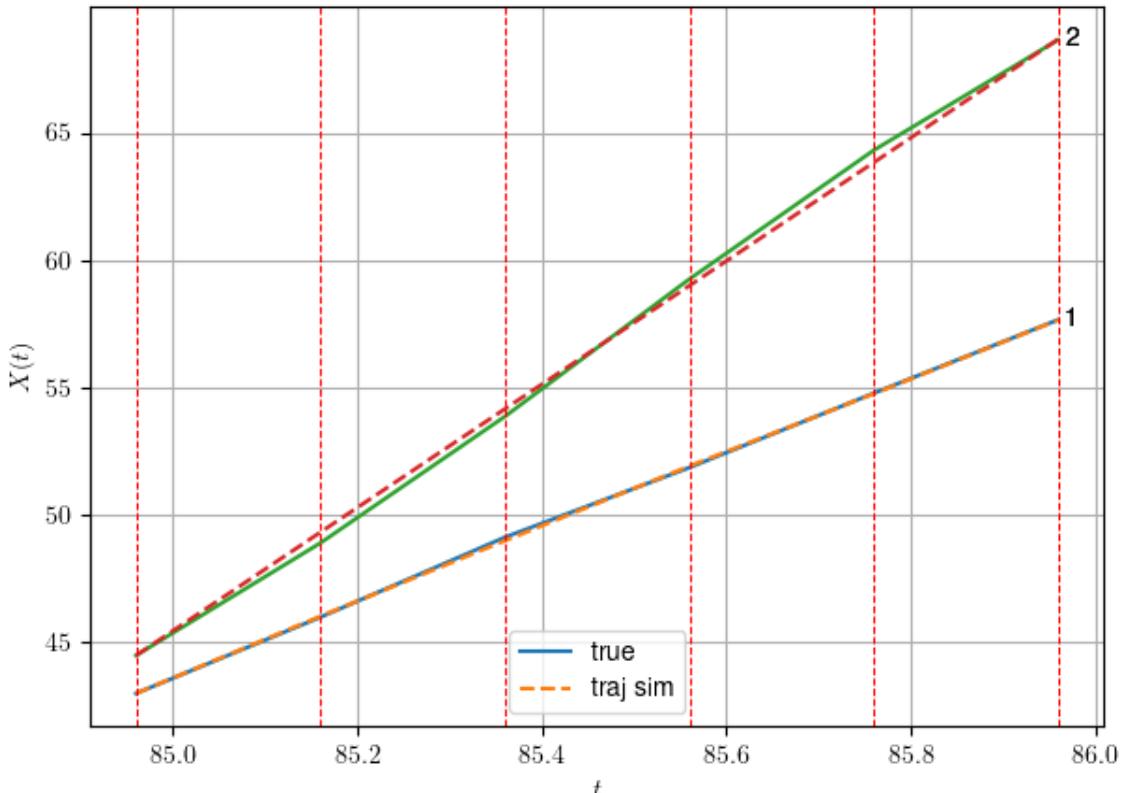
- Time interval n.3: [85.56, 85.76]
 - * y_true: [14.59078665]

```
* v_ann: [14.189804077148438, 24.168678500842805]
```

- Time interval n.4: [85.76, 85.96]
 - * y_true: [14.41085932]
 - * v_ann: [14.472697257995605, 24.168678500842805]

- * err= 0.04877059596307265
- * Learning rate NN = 0.0003874204121530056
- * diff = 8.198316648733855e-05

df n. 2 – Scene n. 7, at it = 500



For scene 7/69

- * use LR_NN=0.001 with err=9.576347002004043 at it=24
- * v0_scn_mean = 24.401931360764564
- * MAE = 0.04877059596307265

df n.2, scene n.8/69

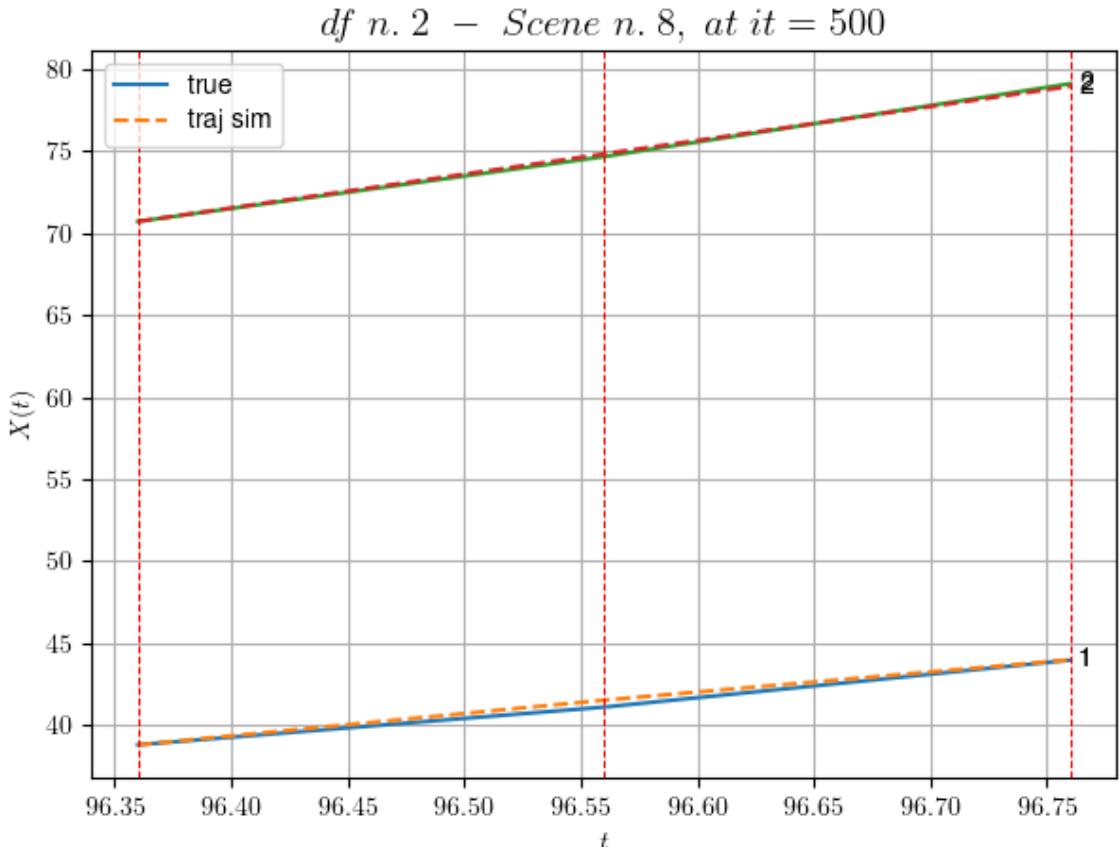
We have 2 time intervals inside [96.36, 96.76]

- Time interval n.0: [96.36, 96.56]
 - * y_true: [11.49034742]
 - * v_ann: [13.610556602478027, 20.5988482156299]

- Time interval n.1: [96.56, 96.76]

```
* y_true: [14.32646364]
* v_ann: [12.30363655090332, 20.5988482156299]
```

```
* err= 0.03936897427289191
* Learning rate NN = 7.289998757187277e-05
* diff = 0.00048559188181082624
```



For scene 8/69

```
* use LR_NN=0.0001 with err=2.8607250694579274 at it=24
* v0_scn_mean = 20.97489428693282
* MAE = 0.03936897427289191
```

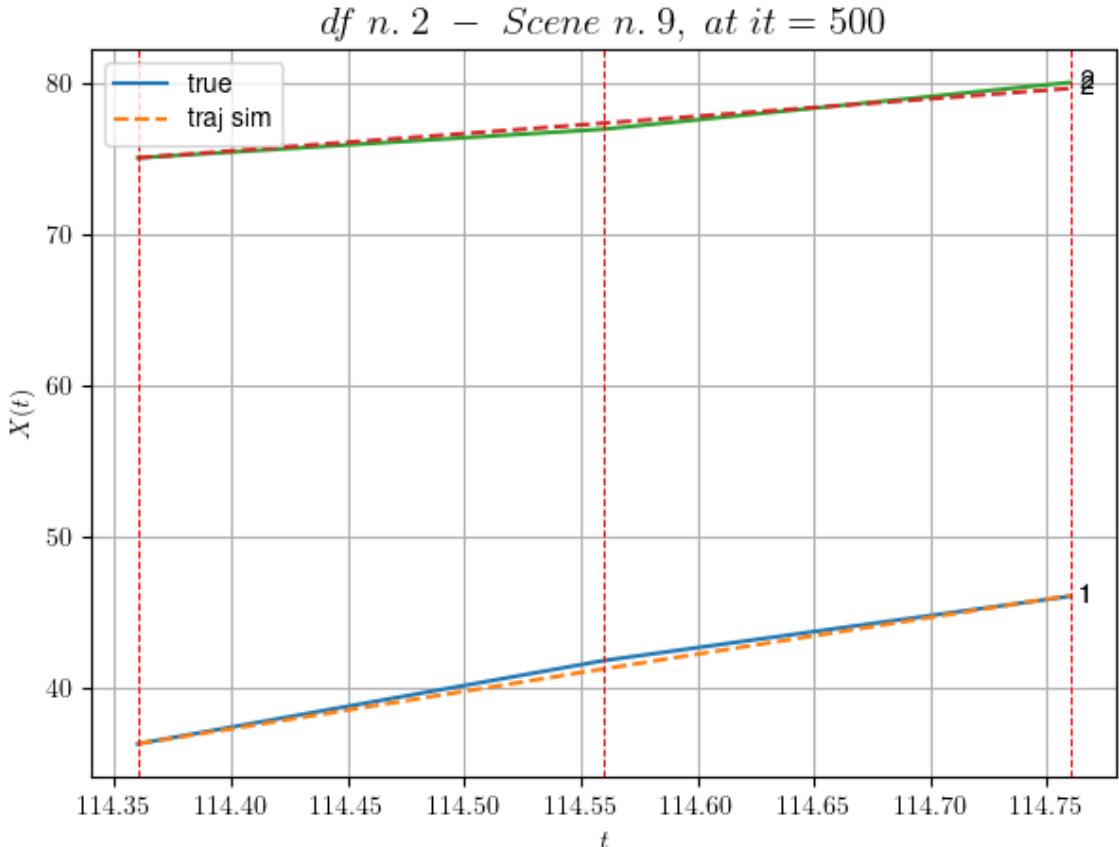
df n.2, scene n.9/69

We have 2 time intervals inside [114.36, 114.76]

- Time interval n.0: [114.36, 114.56]
 - * y_true: [27.56081405]
 - * v_ann: [24.812257766723633, 11.484652947736423]

- Time interval n.1: [114.56, 114.76]
 - * y_true: [21.25080883]
 - * v_ann: [24.273509979248047, 11.484652947736423]

```
* err= 0.1033266712442795
* Learning rate NN = 3.6449993785936385e-05
* diff = 0.00029526890525119476
```



For scene 9/69

```
* use LR_NN=5e-05 with err=11.025352137295087 at it=24
* v0_scn_mean = 12.225266829685475
* MAE = 0.10205040707883384
```

df n.2, scene n.10/69

We have 4 time intervals inside [127.56,128.36]

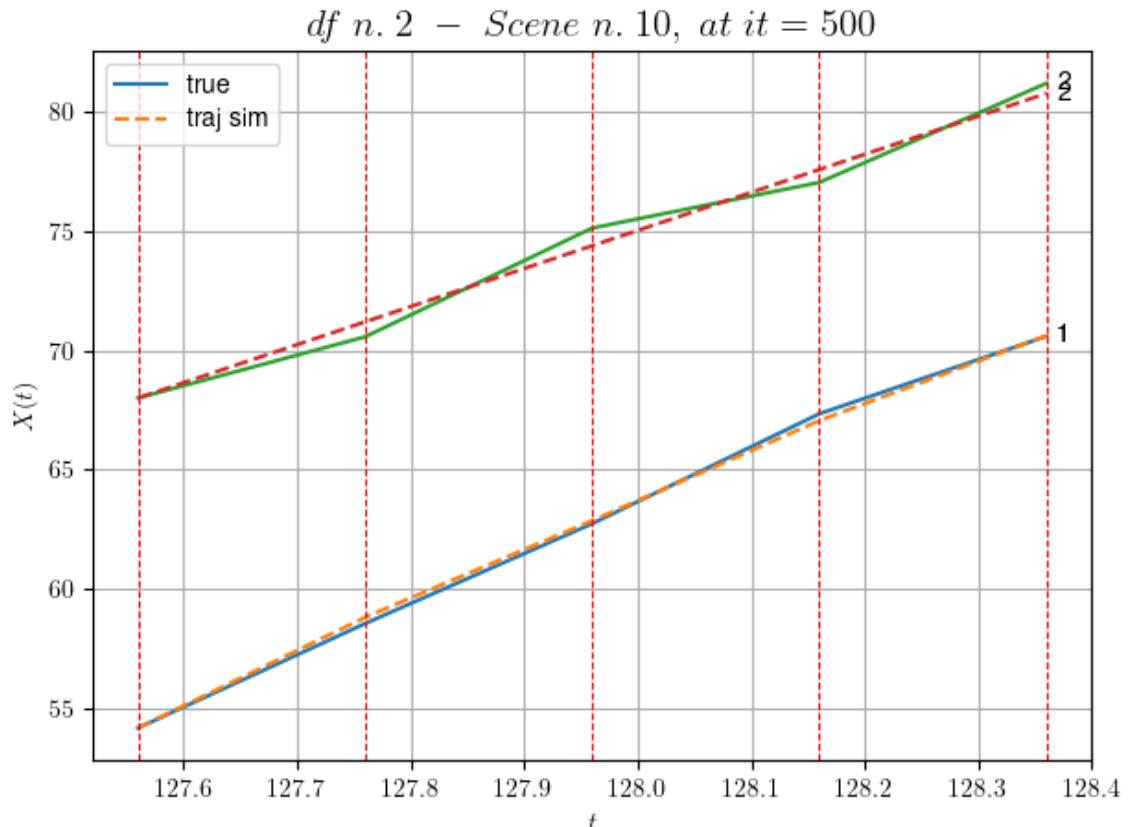
- Time interval n.0: [127.56, 127.76]
 - * y_true: [21.85131651]
 - * v_ann: [23.14143943786621, 15.931637978874251]

- Time interval n.1: [127.76, 127.96]
 - * y_true: [20.90145861]
 - * v_ann: [20.2482922973633, 15.931637978874251]

- Time interval n.2: [127.96, 128.16]
 - * y_true: [23.00184718]
 - * v_ann: [20.926637649536133, 15.931637978874251]

```
- Time interval n.3: [128.16, 128.36]
* y_true: [16.20146224]
* v_ ann: [17.78356170654297, 15.931637978874251]
```

```
* err= 0.15741627864705804
* Learning rate NN = 0.000239148415857926
* diff = 4.7464275798880795e-06
```

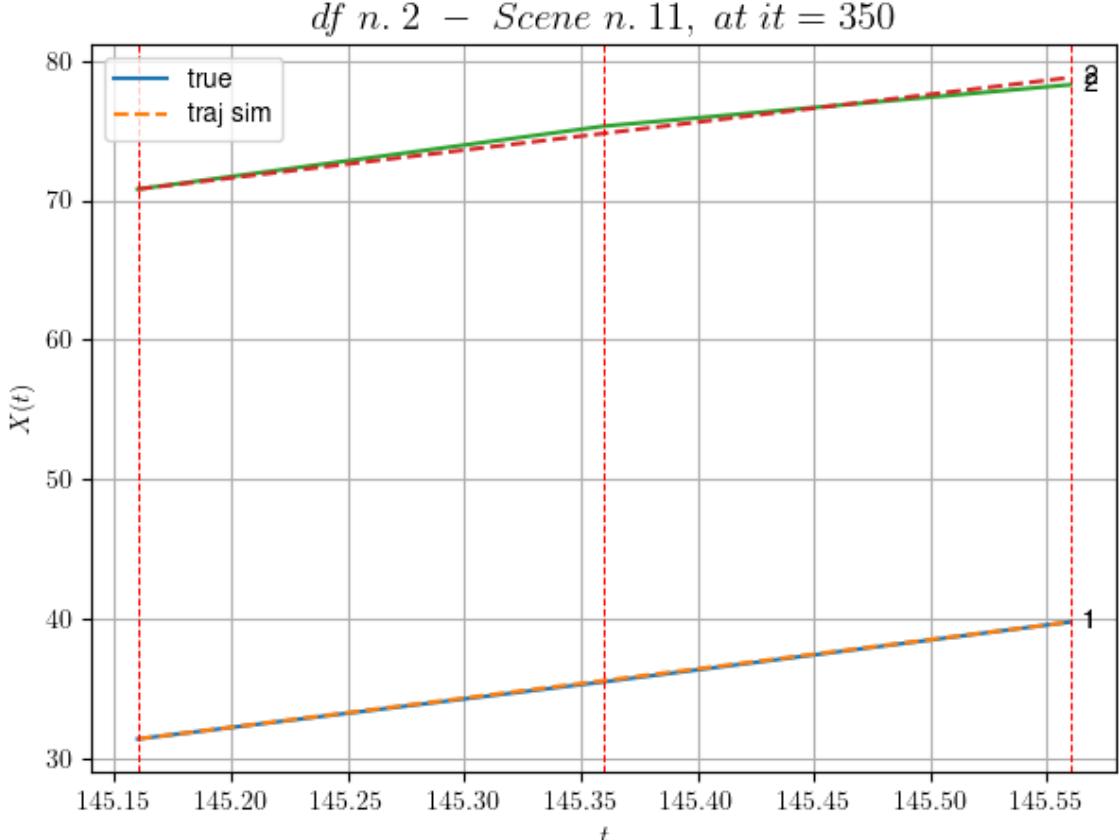


For scene 10/69

```
* use LR_NN=0.0005 with err=23.39242610066418 at it=24
* v0_scn_mean = 16.494372459611686
* MAE = 0.1574112294983821
```

df n.2, scene n.11/69

```
We have 2 time intervals inside [145.16,145.56]
* err= 0.0903659466064372
* Learning rate NN = 4.049999552080408e-05
* diff = 1.923844533679997e-07
```



For scene 11/69

- * use LR_NN=5e-05 with err=3.754469019635107 at it=24
- * v0_scn_mean = 20.589118746423992
- * MAE = 0.0903659466064372

df n.2, scene n.12/69

We have 6 time intervals inside [163.76, 164.96]

- Time interval n.0: [163.76, 163.96]
 - * y_true: [22.33118282]
 - * v_ann: [17.83497428894043, 19.717171056115667]

- Time interval n.1: [163.96, 164.16]
 - * y_true: [19.30705544]
 - * v_ann: [19.064321517944336, 19.717171056115667]

- Time interval n.2: [164.16, 164.36]
 - * y_true: [17.5112259]
 - * v_ann: [19.024333953857422, 19.717171056115667]

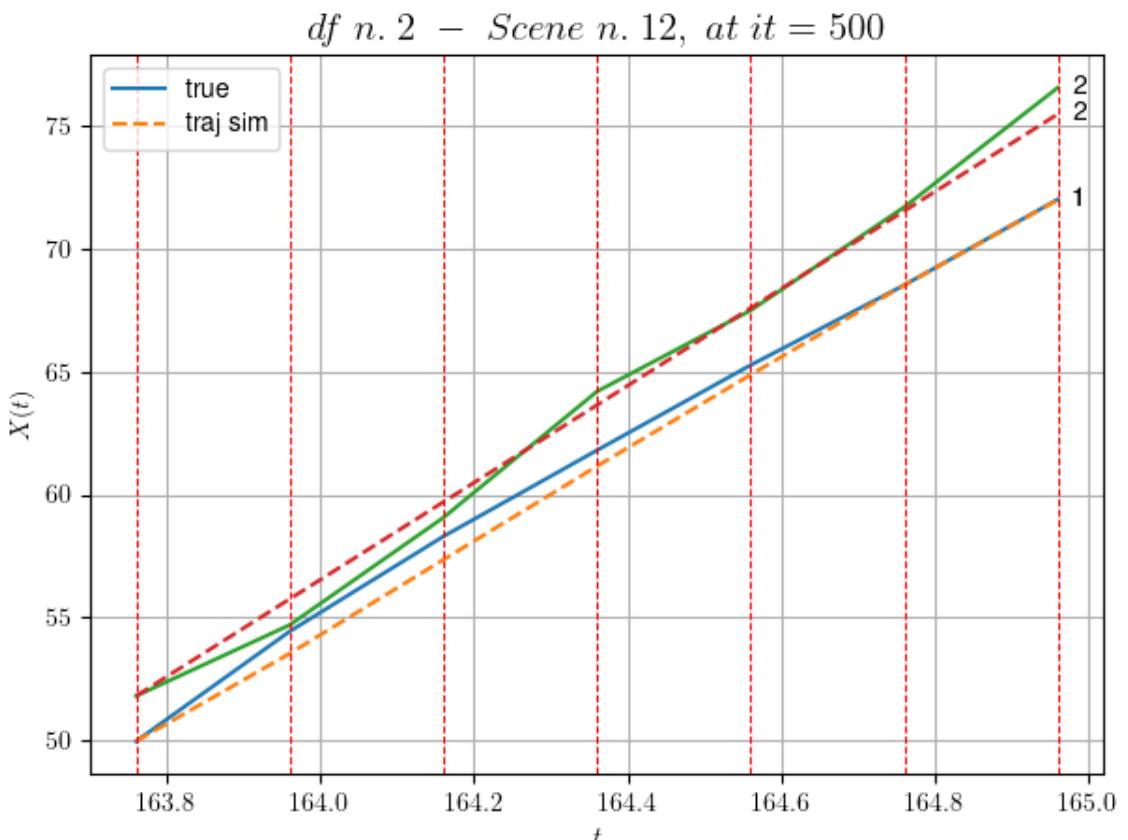
- Time interval n.3: [164.36, 164.56]
 - * y_true: [17.31134712]

* v_ann: [18.575763702392578, 19.717171056115667]

- Time interval n.4: [164.56, 164.76]
 * y_true: [16.27141068]
 * v_ann: [18.21461296081543, 19.717171056115667]

- Time interval n.5: [164.76, 164.96]
 * y_true: [17.43166556]
 * v_ann: [17.34330940246582, 19.717171056115667]

* err= 0.37806380710643883
 * Learning rate NN = 0.0015690524596720934
 * diff = 0.004240333176263156



For scene 12/69

* use LR_NN=0.005 with err=26.12953980437722 at it=24
 * v0_scn_mean = 20.12848421379225
 * MAE = 0.37806380710643883

df n.2, scene n.13/69

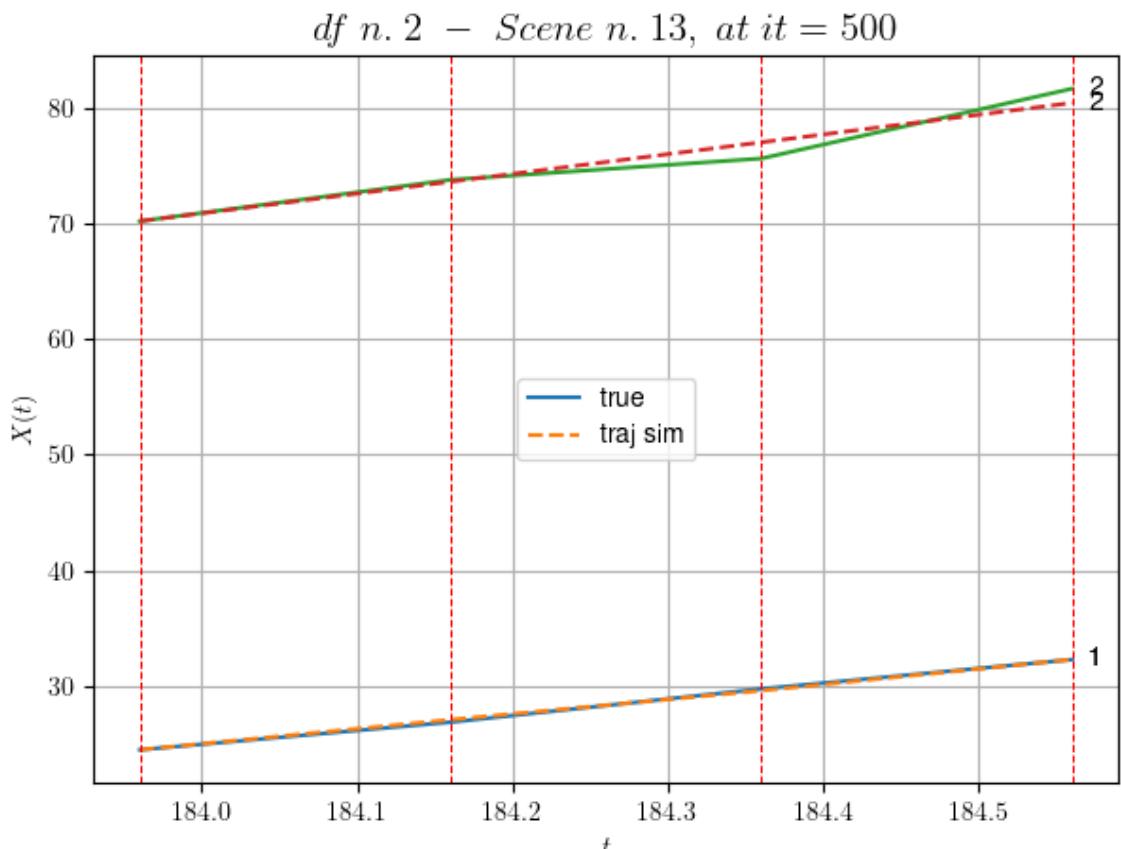
We have 3 time intervals inside [183.96,184.56]
 - Time interval n.0: [183.96, 184.16]

```
* y_true: [11.94015042]
* v_ann: [13.003790855407715, 17.051810908721155]
```

```
- Time interval n.1: [184.16, 184.36]
* y_true: [14.40021558]
* v_ann: [12.550975799560547, 17.051810908721155]
```

```
- Time interval n.2: [184.36, 184.56]
* y_true: [12.66022732]
* v_ann: [13.48892593383789, 17.051810908721155]
```

```
* err= 0.4465923210460926
* Learning rate NN = 2.952449540316593e-05
* diff = 1.2720711221381187e-05
```



For scene 13/69

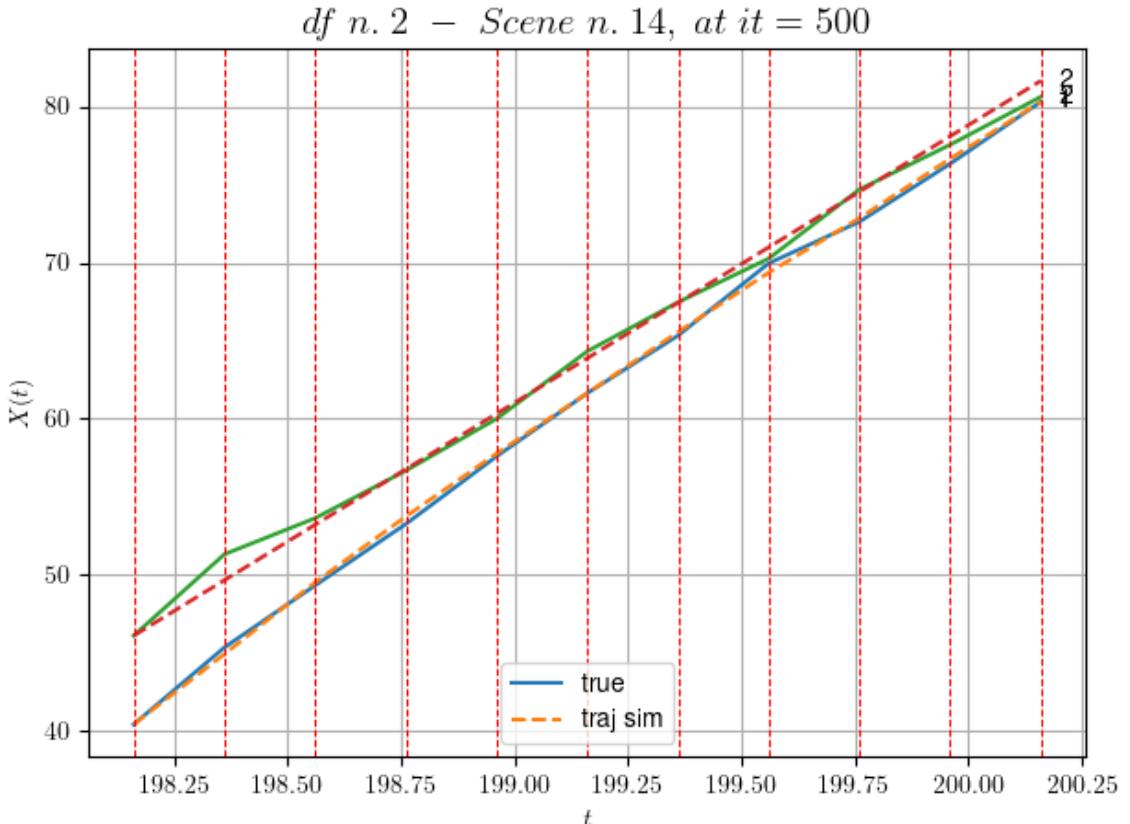
```
* use LR_NN=5e-05 with err=11.492607932113831 at it=24
* v0_scn_mean = 17.569738472273194
* MAE = 0.44324686667757784
```

df n.2, scene n.14/69

We have 10 time intervals inside [198.16,200.16]

- Time interval n.0: [198.16, 198.36]
 - * y_true: [24.60086798]
 - * v_ann: [22.467559814453125, 17.756279251513202]
-
- Time interval n.1: [198.36, 198.56]
 - * y_true: [19.85085228]
 - * v_ann: [22.963457107543945, 17.756279251513202]
-
- Time interval n.2: [198.56, 198.76]
 - * y_true: [19.65099051]
 - * v_ann: [21.072940826416016, 17.756279251513202]
-
- Time interval n.3: [198.76, 198.96]
 - * y_true: [21.65127406]
 - * v_ann: [20.168399810791016, 17.756279251513202]
-
- Time interval n.4: [198.96, 199.16]
 - * y_true: [20.20137444]
 - * v_ann: [19.29316520690918, 17.756279251513202]
-
- Time interval n.5: [199.16, 199.36]
 - * y_true: [18.45142335]
 - * v_ann: [19.579059600830078, 17.756279251513202]
-
- Time interval n.6: [199.36, 199.56]
 - * y_true: [23.11925224]
 - * v_ann: [19.035593032836914, 17.756279251513202]
-
- Time interval n.7: [199.56, 199.76]
 - * y_true: [13.30128192]
 - * v_ann: [17.409534454345703, 17.756279251513202]
-
- Time interval n.8: [199.76, 199.96]
 - * y_true: [18.55195156]
 - * v_ann: [19.016090393066406, 17.756279251513202]
-
- Time interval n.9: [199.96, 200.16]
 - * y_true: [19.85230976]
 - * v_ann: [18.20856475830078, 17.756279251513202]
-

```
* err= 0.28027188770843237
* Learning rate NN = 0.00013508510892279446
* diff = 0.00027107202876002301
```



For scene 14/69

```
* use LR_NN=0.001 with err=109.12829101451884 at it=24
* v0_scn_mean = 18.246028081358958
* MAE = 0.2800067759177873
```

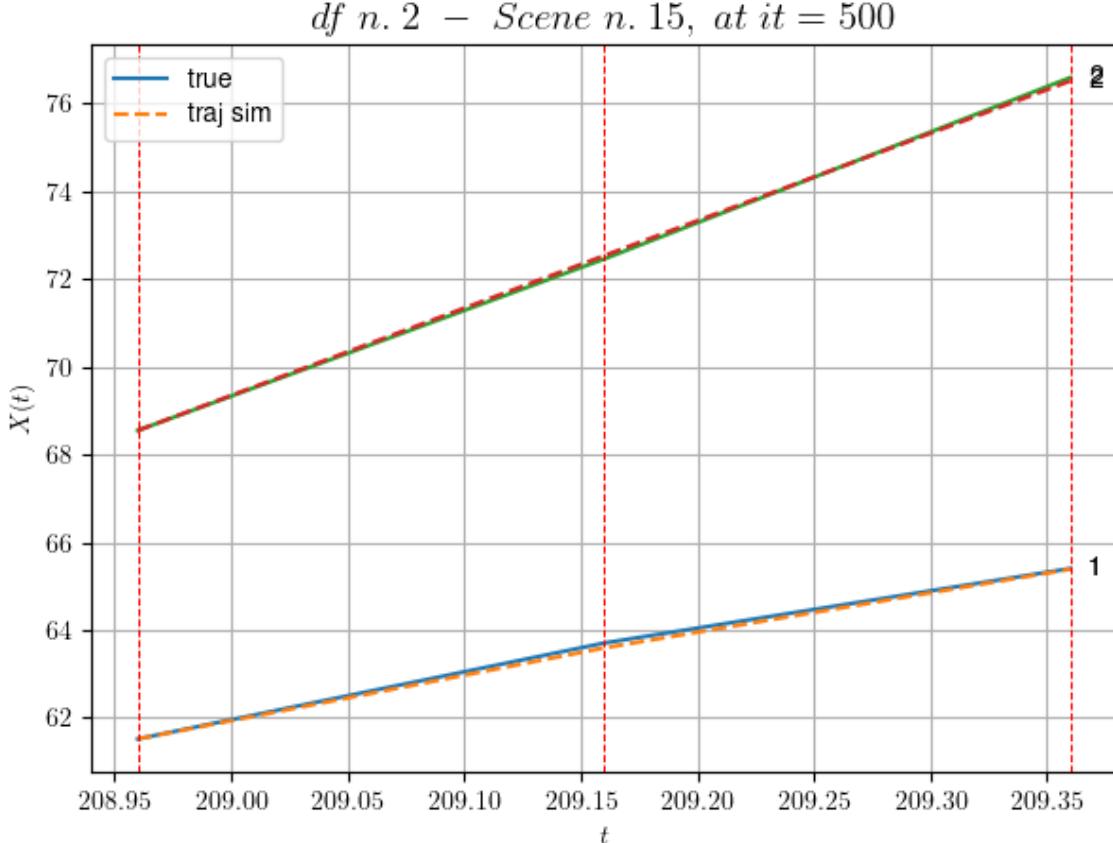
df n.2, scene n.15/69

We have 2 time intervals inside [208.96, 209.36]

- Time interval n.0: [208.96, 209.16]
 - * y_true: [10.93080354]
 - * v_ann: [10.375737190246582, 19.925309614241876]

- Time interval n.1: [209.16, 209.36]
 - * y_true: [8.50069201]
 - * v_ann: [8.975811004638672, 19.925309614241876]

```
* err= 0.0040571156724225925
* Learning rate NN = 0.00036449998151510954
* diff = 0.00011192529764254399
```



For scene 15/69

- * use LR_NN=0.0005 with err=3.3883183176442593 at it=24
- * v0_scn_mean = 20.328297229595496
- * MAE = 0.0040571156724225925

df n.2, scene n.16/69

We have 9 time intervals inside [210.56, 212.36]

- Time interval n.0: [210.56, 210.76]
 - * y_true: [15.80031472]
 - * v_ann: [17.506389617919922, 22.56296408593125]

- Time interval n.1: [210.76, 210.96]
 - * y_true: [21.08915117]
 - * v_ann: [17.604747772216797, 22.56296408593125]

- Time interval n.2: [210.96, 211.16]
 - * y_true: [16.15047692]
 - * v_ann: [17.926359176635742, 22.56296408593125]

- Time interval n.3: [211.16, 211.36]
 - * y_true: [24.85089544]

```
* v_ann: [18.479814529418945, 22.56296408593125]
```

```
- Time interval n.4: [211.36, 211.56]
* y_true: [14.9506415]
* v_ann: [19.205299377441406, 22.56296408593125]
```

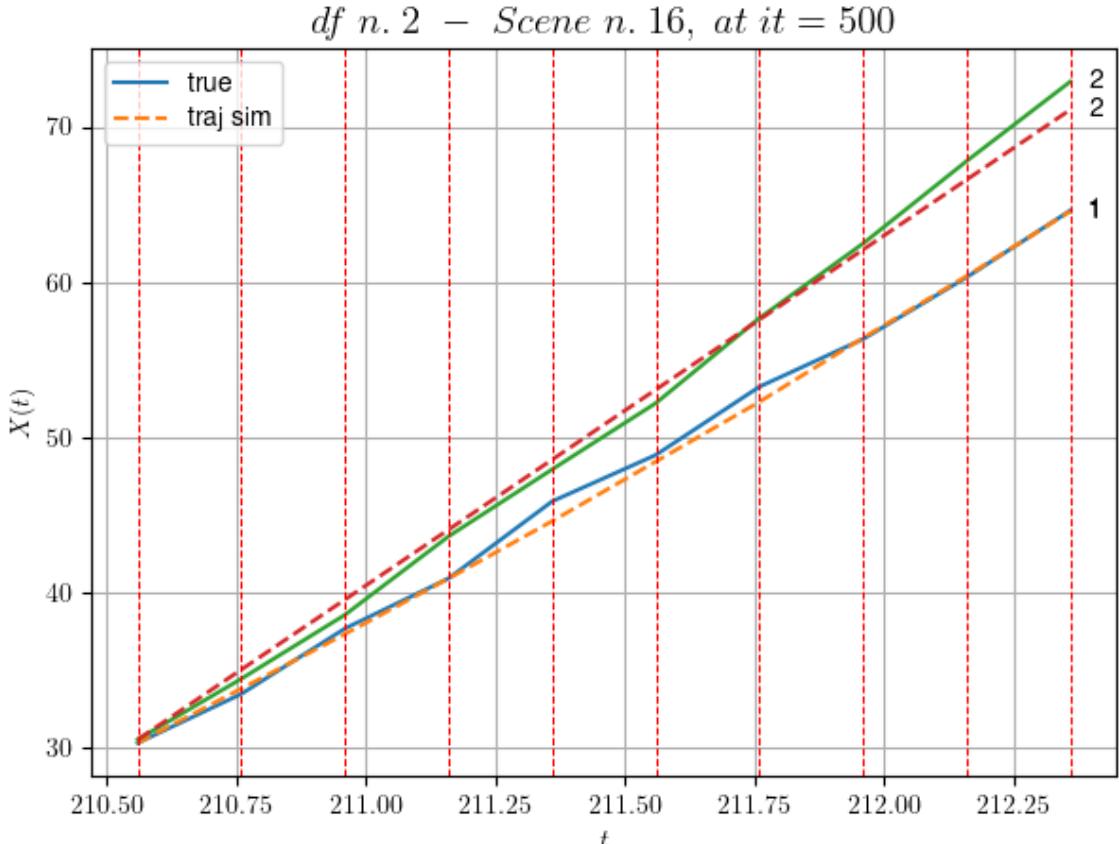
```
- Time interval n.5: [211.56, 211.76]
* y_true: [22.00109747]
* v_ann: [19.254941940307617, 22.56296408593125]
```

```
- Time interval n.6: [211.76, 211.96]
* y_true: [15.35088179]
* v_ann: [20.60600471496582, 22.56296408593125]
```

```
- Time interval n.7: [211.96, 212.16]
* y_true: [19.95129864]
* v_ann: [19.950439453125, 22.56296408593125]
```

```
- Time interval n.8: [212.16, 212.36]
* y_true: [21.50160509]
* v_ann: [20.83428192138672, 22.56296408593125]
```

```
* err= 0.5280477199192062
* Learning rate NN = 0.0008338586776517332
* diff = 0.009619243449363934
```



For scene 16/69

- * use LR_NN=0.005 with err=31.660292442523176 at it=24
- * v0_scn_mean = 22.860445522437804
- * MAE = 0.5280343927654769

df n.2, scene n.17/69

We have 3 time intervals inside [215.36, 215.96]

- Time interval n.0: [215.36, 215.56]
 - * y_true: [23.8914478]
 - * v_ann: [25.32405662536621, 17.643232536851862]

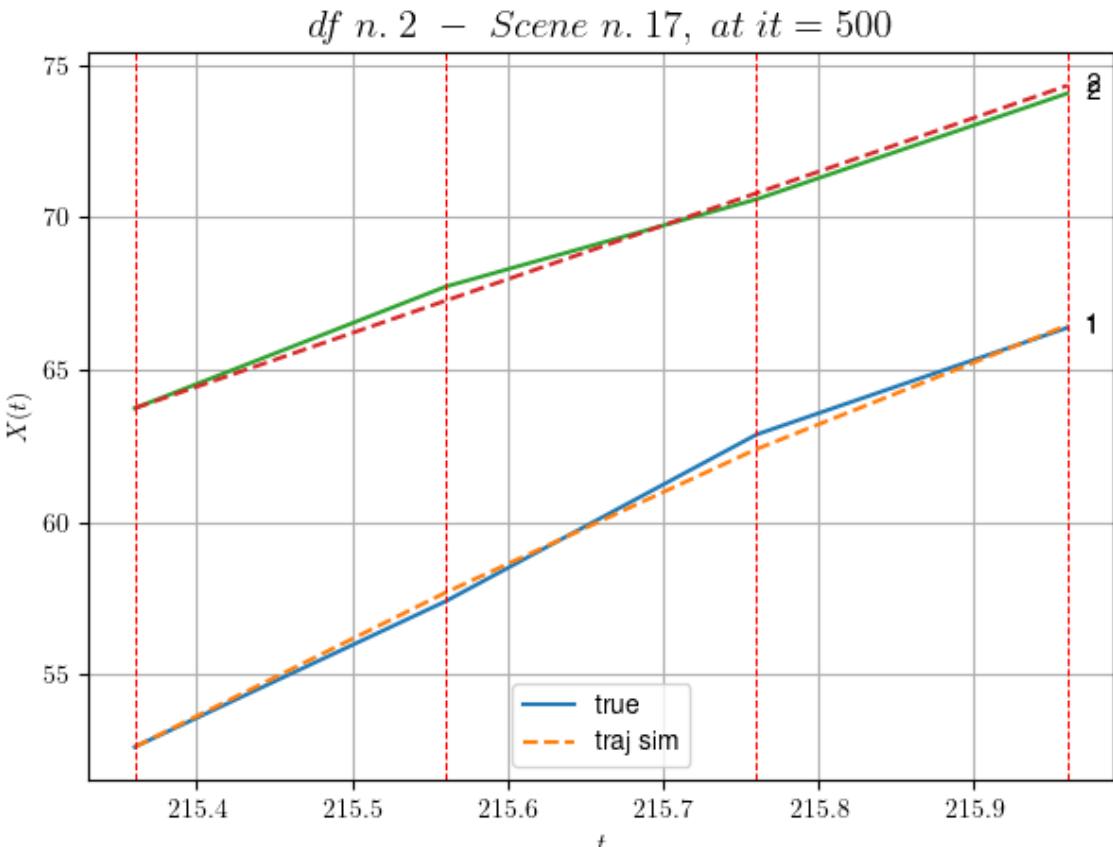
- Time interval n.1: [215.56, 215.76]
 - * y_true: [27.35187922]
 - * v_ann: [23.52899169921875, 17.643232536851862]

- Time interval n.2: [215.76, 215.96]
 - * y_true: [17.52141306]
 - * v_ann: [20.32589340209961, 17.643232536851862]

* err= 0.07949211477671833

* Learning rate NN = 0.0002952449722215533

* diff = 0.00017781137002700897



For scene 17/69

* use LR_NN=0.0005 with err=11.223356170821429 at it=24
 * v0_scn_mean = 18.137503235283564
 * MAE = 0.07949211477671833

df n.2, scene n.18/69

We have 4 time intervals inside [218.36, 219.16]

- Time interval n.0: [218.36, 218.56]
 * y_true: [9.80048787]
 * v_ann: [8.267184257507324, 19.2918574497649]

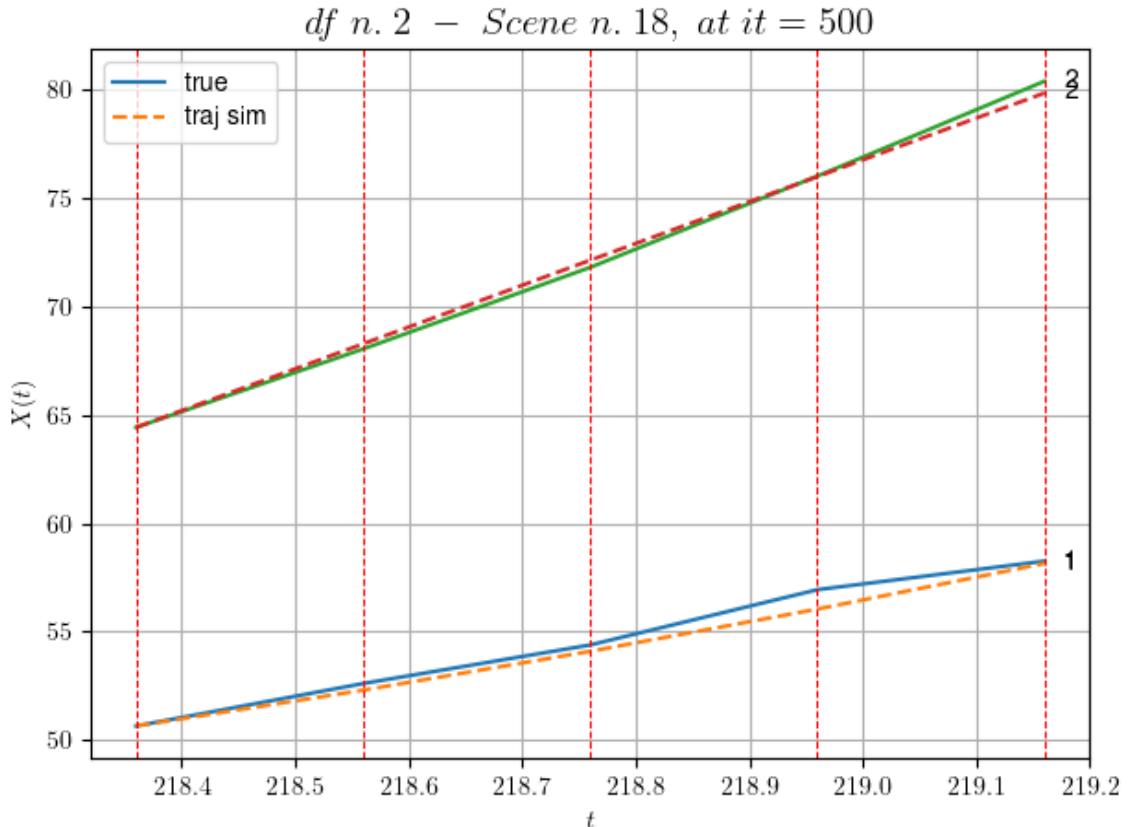
- Time interval n.1: [218.56, 218.76]
 * y_true: [8.90049368]
 * v_ann: [8.966168403625488, 19.2918574497649]

- Time interval n.2: [218.76, 218.96]
 * y_true: [12.75076549]
 * v_ann: [9.744897842407227, 19.2918574497649]

- Time interval n.3: [218.96, 219.16]

```
* y_true: [6.600424]
* v_ann: [10.53588581085205, 19.2918574497649]
```

```
* err= 0.1454560962886996
* Learning rate NN = 4.7829678806010634e-05
* diff = 0.00045211428028771317
```



For scene 18/69

```
* use LR_NN=0.0001 with err=13.379682372913798 at it=24
* v0_scn_mean = 19.72018315169216
* MAE = 0.1454560962886996
```

df n.2, scene n.19/69

We have 4 time intervals inside [220.36, 221.16]

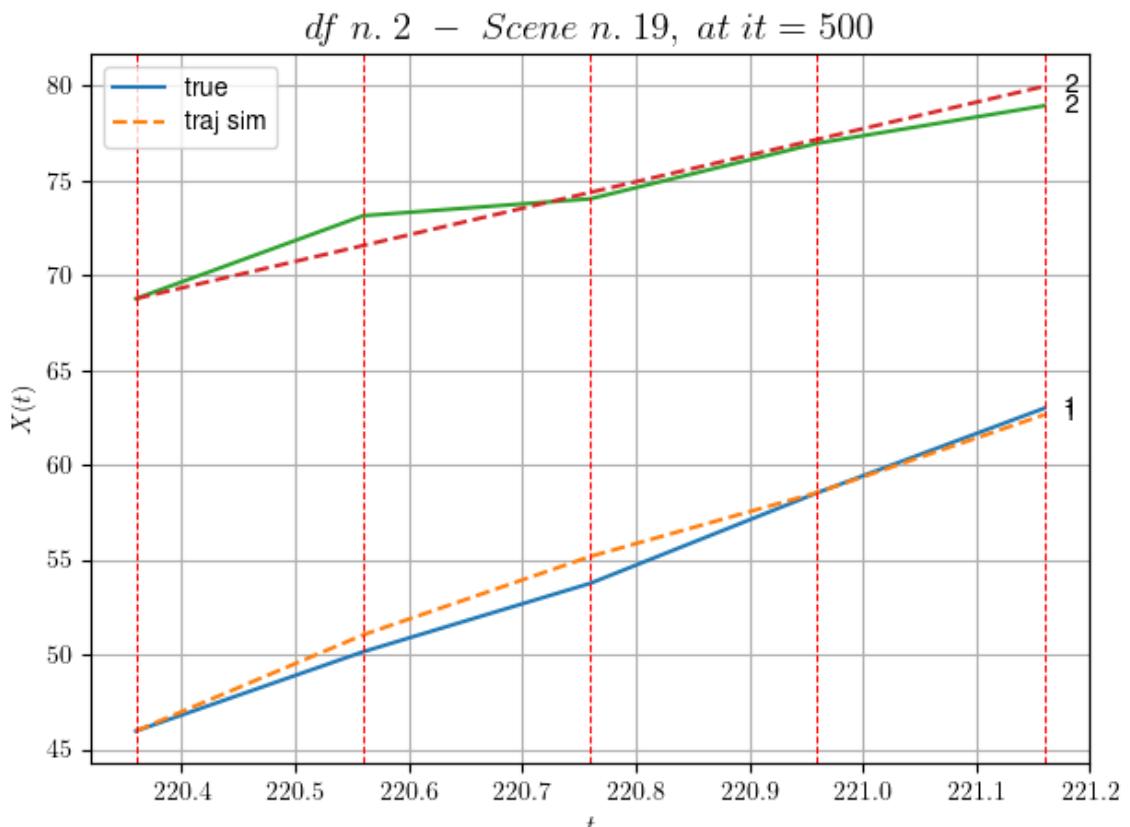
- Time interval n.0: [220.36, 220.56]
 - * y_true: [20.88092381]
 - * v_ann: [25.33547019958496, 13.996427133410208]

- Time interval n.1: [220.56, 220.76]
 - * y_true: [18.0409286]
 - * v_ann: [20.666109085083008, 13.996427133410208]

- Time interval n.2: [220.76, 220.96]
 * y_true: [23.87145329]
 * v_ann: [16.851863861083984, 13.996427133410208]

- Time interval n.3: [220.96, 221.16]
 * y_true: [22.30157053]
 * v_ann: [20.526874542236328, 13.996427133410208]

* err= 0.6594787545094213
 * Learning rate NN = 0.000478296831715852
 * diff = 0.0025832491369178756



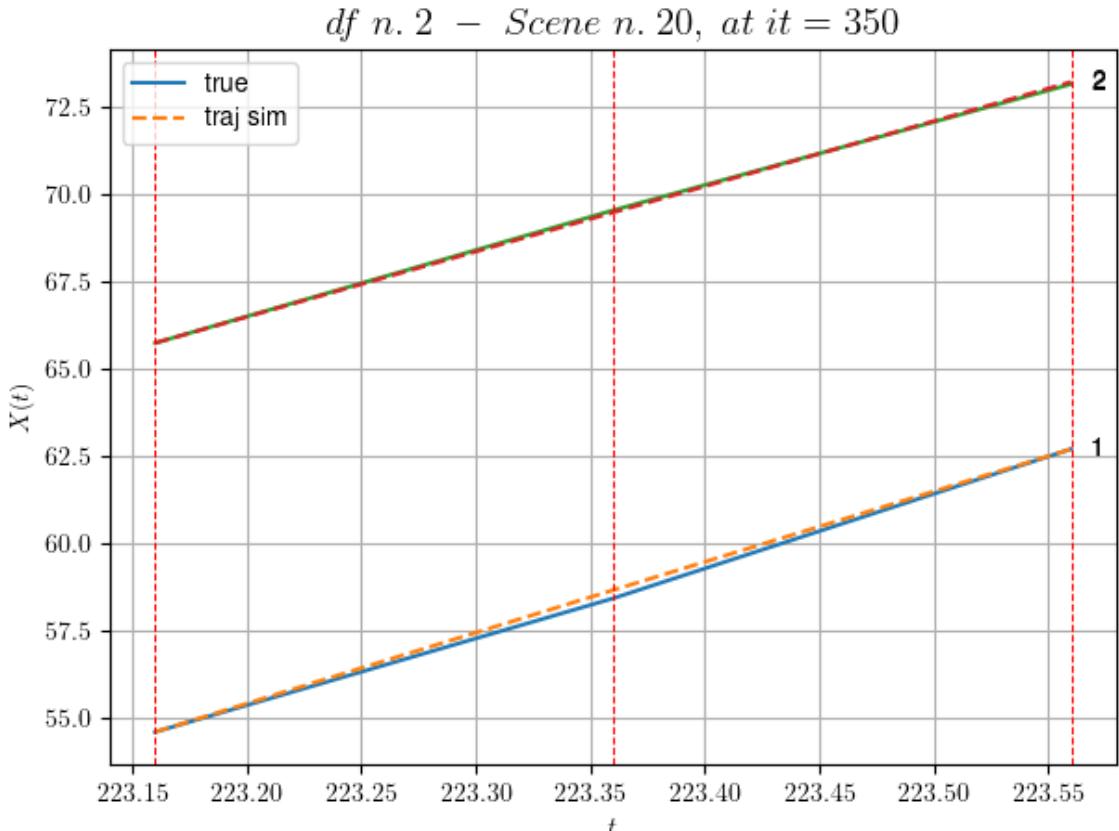
For scene 19/69

* use LR_NN=0.001 with err=33.73228164310642 at it=24
 * v0_scn_mean = 14.63657004795146
 * MAE = 0.5369657767956735

df n.2, scene n.20/69

We have 2 time intervals inside [223.16,223.56]

* err= 0.010597616520141453
 * Learning rate NN = 8.099999104160815e-05
 * diff = 9.858240871546409e-08



For scene 20/69

- * use LR_NN=0.0001 with err=4.31412808815902 at it=24
- * v0_scn_mean = 19.344177611785387
- * MAE = 0.010597616442275776

df n.2, scene n.21/69

We have 10 time intervals inside [233.36, 235.36]

- Time interval n.0: [233.36, 233.56]
 - * y_true: [15.9800087]
 - * v_ann: [17.558025360107422, 20.300783427084596]

- Time interval n.1: [233.56, 233.76]
 - * y_true: [18.0400262]
 - * v_ann: [17.741504669189453, 20.300783427084596]

- Time interval n.2: [233.76, 233.96]
 - * y_true: [20.58006219]
 - * v_ann: [17.808828353881836, 20.300783427084596]

- Time interval n.3: [233.96, 234.16]
 - * y_true: [16.38007957]

```
* v_ann: [17.835336685180664, 20.300783427084596]
```

```
- Time interval n.4: [234.16, 234.36]
* y_true: [18.6401389]
* v_ann: [18.276782989501953, 20.300783427084596]
```

```
- Time interval n.5: [234.36, 234.56]
* y_true: [17.34017727]
* v_ann: [18.22860336303711, 20.300783427084596]
```

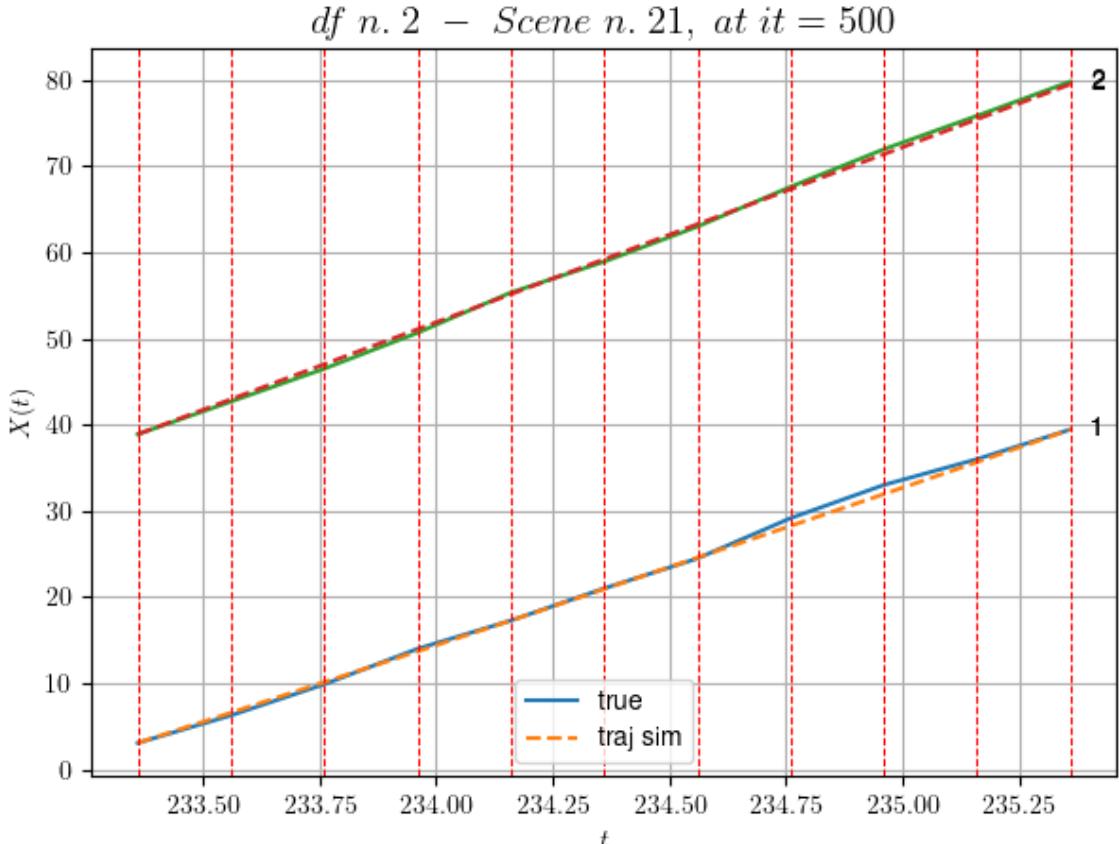
```
- Time interval n.6: [234.56, 234.76]
* y_true: [23.40033901]
* v_ann: [18.41728401184082, 20.300783427084596]
```

```
- Time interval n.7: [234.76, 234.96]
* y_true: [19.25036066]
* v_ann: [18.42317008972168, 20.300783427084596]
```

```
- Time interval n.8: [234.96, 235.16]
* y_true: [15.00034786]
* v_ann: [18.59038543701172, 20.300783427084596]
```

```
- Time interval n.9: [235.16, 235.36]
* y_true: [17.18048111]
* v_ann: [18.853971481323242, 20.300783427084596]
```

```
* err= 0.16899869051484184
* Learning rate NN = 1.350850993731001e-06
* diff = 0.00027496629190632005
```



For scene 21/69

- * use LR_NN=1e-05 with err=64.58142410372267 at it=24
- * v0_scn_mean = 20.688752089926997
- * MAE = 0.16676999461045275

df n.2, scene n.22/69

We have 7 time intervals inside [246.36, 247.76]

- Time interval n.0: [246.36, 246.56]
 - * y_true: [19.95129864]
 - * v_ann: [21.802453994750977, 3.538091727525918]

- Time interval n.1: [246.56, 246.76]
 - * y_true: [17.951325]
 - * v_ann: [19.358154296875, 3.538091727525918]

- Time interval n.2: [246.76, 246.96]
 - * y_true: [19.60162726]
 - * v_ann: [17.243436813354492, 3.538091727525918]

- Time interval n.3: [246.96, 247.16]
 - * y_true: [7.95071562]

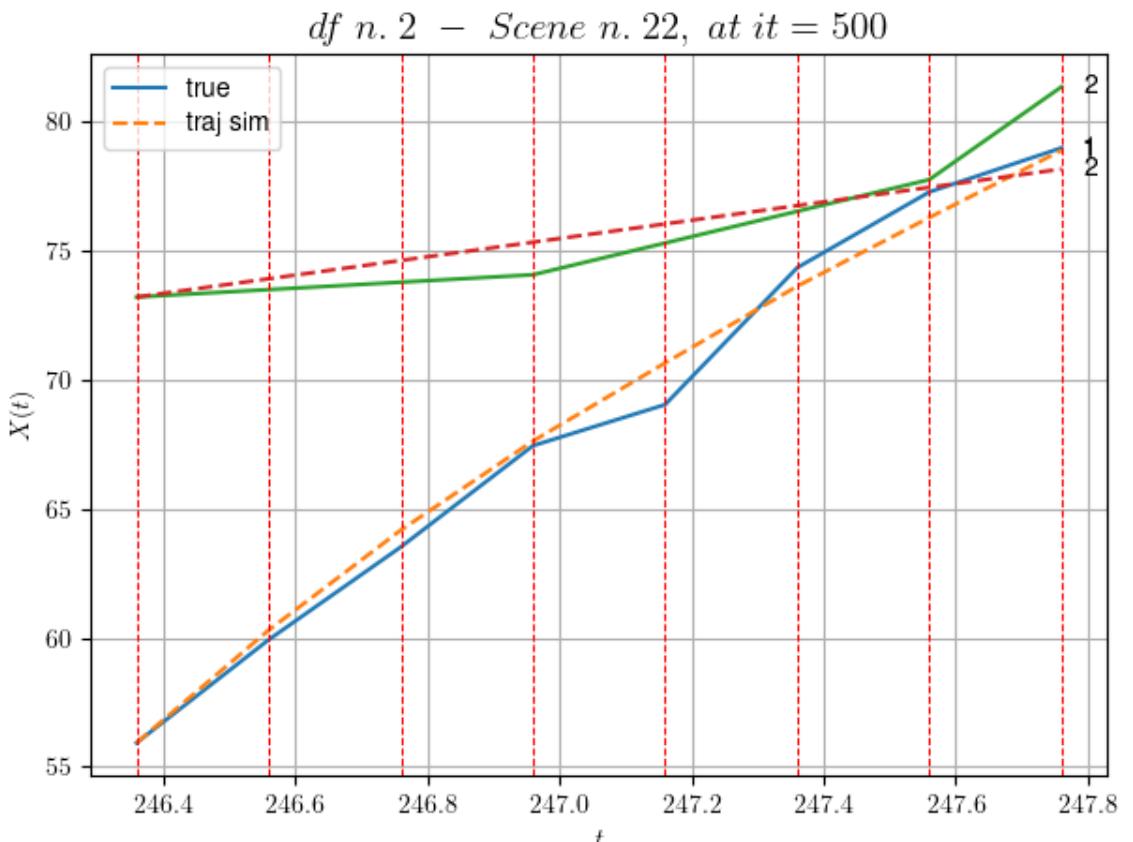
```
* v_ann: [15.1165771484375, 3.538091727525918]
```

```
- Time interval n.4: [247.16, 247.36]
* y_true: [26.50263379]
* v_ann: [14.845843315124512, 3.538091727525918]
```

```
- Time interval n.5: [247.36, 247.56]
* y_true: [14.6516272]
* v_ann: [13.30698013305664, 3.538091727525918]
```

```
- Time interval n.6: [247.56, 247.76]
* y_true: [8.53878151]
* v_ann: [12.984404563903809, 3.538091727525918]
```

```
* err= 1.124170085289117
* Learning rate NN = 2.5418647055630572e-05
* diff = 0.002508583663417552
```



For scene 22/69

```
* use LR_NN=0.0001 with err=240.6657867596412 at it=24
* v0_scn_mean = 4.596568058222694
* MAE = 1.124170085289117
```

```
df n.2, scene n.23/69
```

```
=====
=====
```

We have 4 time intervals inside [250.16, 250.96]

- Time interval n.0: [250.16, 250.36]
 - * y_true: [20.04064227]
 - * v_ann: [18.298051834106445, 17.364515373912838]

-
- Time interval n.1: [250.36, 250.56]

- * y_true: [20.33077522]
 - * v_ann: [18.00384521484375, 17.364515373912838]

-
- Time interval n.2: [250.56, 250.76]

- * y_true: [17.28077239]
 - * v_ann: [18.133068084716797, 17.364515373912838]

-
- Time interval n.3: [250.76, 250.96]

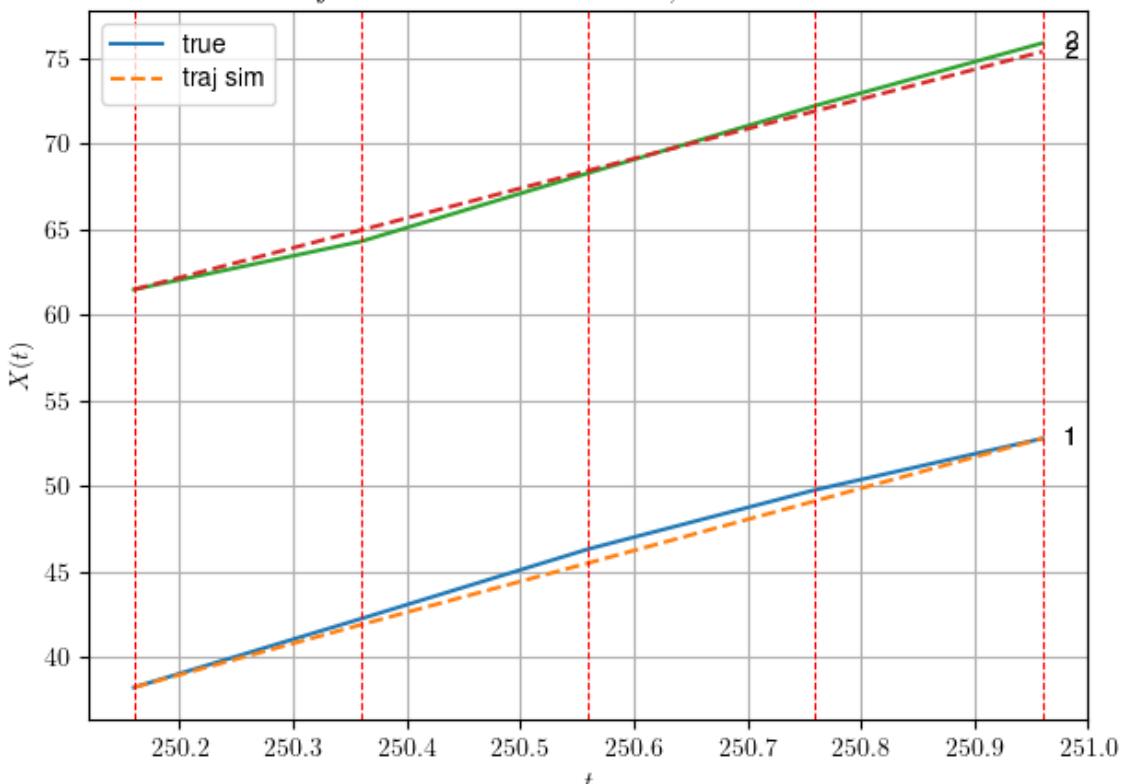
- * y_true: [15.0007656]
 - * v_ann: [18.248292922973633, 17.364515373912838]

* err= 0.2009755298950049

* Learning rate NN = 2.3914839403005317e-05

* diff = 4.0645826267476926e-05

df n. 2 – Scene n. 23, at it = 500



For scene 23/69

* use LR_NN=5e-05 with err=18.355926509226645 at it=24

```
* vθ_scn_mean = 17.869934758859692
* MAE = 0.19807756232655094
```

```
=====
```

df n.2, scene n.24/69

```
=====
```

We have 3 time intervals inside [253.96, 254.56]

- Time interval n.0: [253.96, 254.16]

* y_true: [3.96001286]

* v_ann: [5.169482707977295, 19.059884309202033]

- Time interval n.1: [254.16, 254.36]

* y_true: [5.65002208]

* v_ann: [4.9022297859191895, 19.059884309202033]

- Time interval n.2: [254.36, 254.56]

* y_true: [5.43002353]

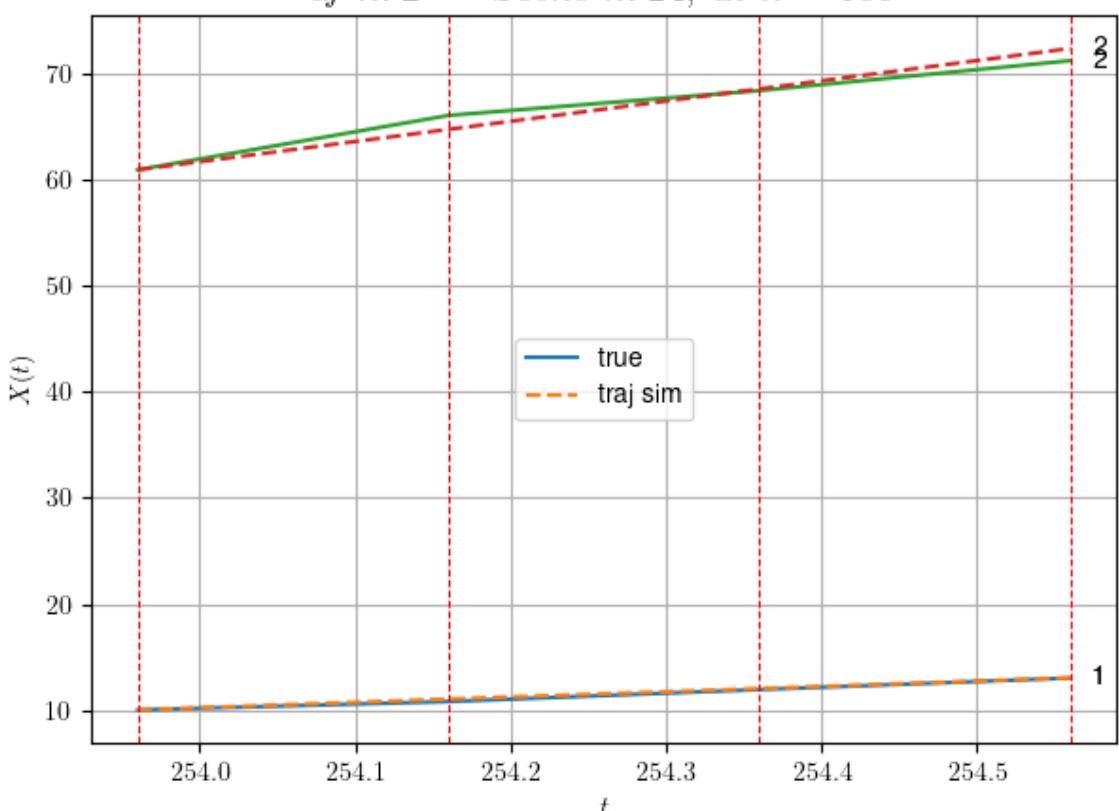
* v_ann: [5.067671775817871, 19.059884309202033]

* err= 0.3933447743043056

* Learning rate NN = 2.952449540316593e-05

* diff = 2.5296617735426352e-05

df n. 2 – Scene n. 24, at it = 500



```
For scene 24/69
* use LR_NN=5e-05 with err=10.11573473777214 at it=24
* v0_scn_mean = 19.497488936750365
* MAE = 0.39316545749975085
```

```
=====
=====
```

```
df n.2, scene n.25/69
```

```
=====
=====
```

```
We have 8 time intervals inside [256.56,258.16]
```

```
- Time interval n.0: [256.56, 256.76]
  * y_true: [19.53061148]
  * v_ann: [21.485151290893555, 18.832978045462884]
```

```
-----
-----
```

```
- Time interval n.1: [256.76, 256.96]
  * y_true: [21.00079129]
  * v_ann: [20.911754608154297, 18.832978045462884]
```

```
-----
-----
```

```
- Time interval n.2: [256.96, 257.16]
  * y_true: [23.14105686]
  * v_ann: [20.338520050048828, 18.832978045462884]
```

```
-----
-----
```

```
- Time interval n.3: [257.16, 257.36]
  * y_true: [13.85071565]
  * v_ann: [19.688228607177734, 18.832978045462884]
```

```
-----
-----
```

```
- Time interval n.4: [257.36, 257.56]
  * y_true: [22.48137092]
  * v_ann: [21.046831130981445, 18.832978045462884]
```

```
-----
-----
```

```
- Time interval n.5: [257.56, 257.76]
  * y_true: [24.69174696]
  * v_ann: [21.139604568481445, 18.832978045462884]
```

```
-----
-----
```

```
- Time interval n.6: [257.76, 257.96]
  * y_true: [14.19111843]
  * v_ann: [20.23883056640625, 18.832978045462884]
```

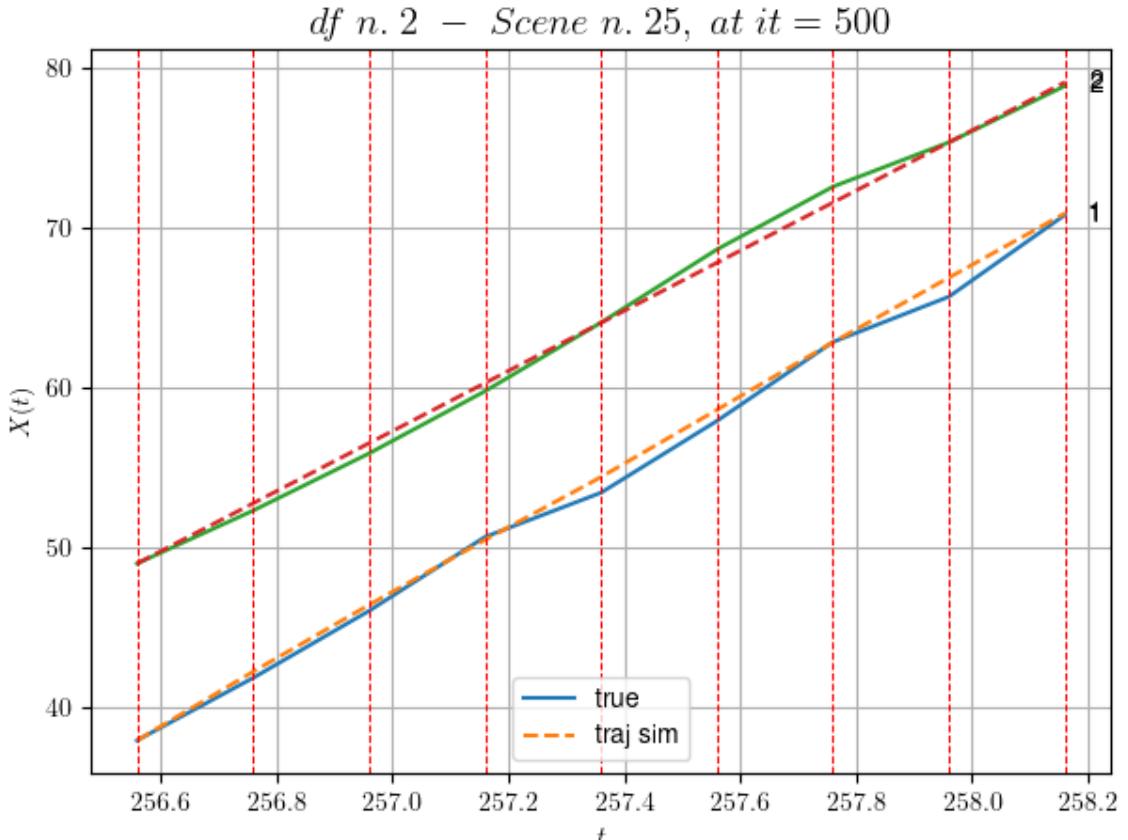
```
-----
-----
```

```
- Time interval n.7: [257.96, 258.16]
  * y_true: [25.60234094]
  * v_ann: [20.128509521484375, 18.832978045462884]
```

```

* err= 0.3226140726477714
* Learning rate NN = 1.029455233947374e-05
* diff = 0.0001817791309115524

```



For scene 25/69

```

* use LR_NN=5e-05 with err=55.64096080838265 at it=24
* v0_scn_mean = 19.27965892355859
* MAE = 0.3205420883530277

```

df n.2, scene n.26/69

We have 2 time intervals inside [275.56, 275.96]

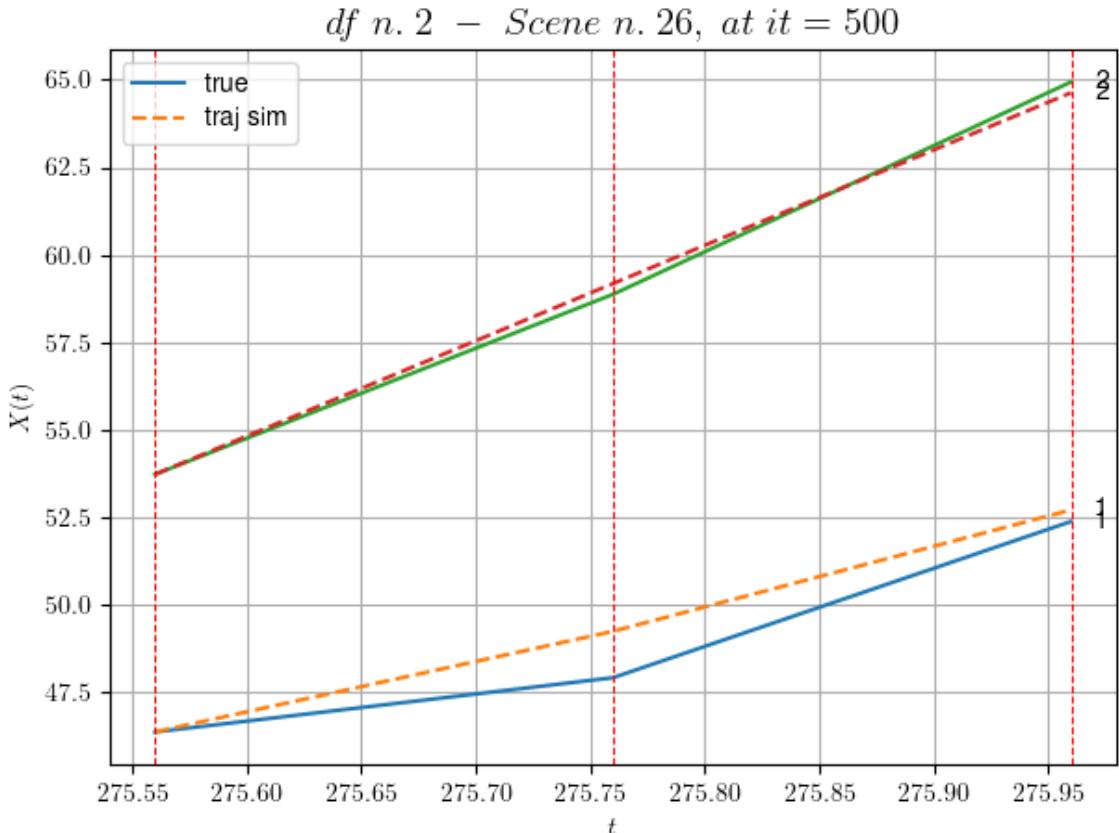
- Time interval n.0: [275.56, 275.76]
 - * y_true: [7.75034114]
 - * v_ann: [14.374637603759766, 27.245148829197323]

- Time interval n.1: [275.76, 275.96]
 - * y_true: [22.30520974]
 - * v_ann: [17.33700180053711, 27.245148829197323]

```

* err= 0.3421832399393556
* Learning rate NN = 3.6449993785936385e-05
* diff = 0.003921133799983323

```



For scene 26/69

- * use LR_NN=5e-05 with err=0.403629064616586 at it=24
- * v0_scn_mean = 27.355342876006034
- * MAE = 0.3421832399393556

df n.2, scene n.27/69

We have 3 time intervals inside [287.36, 287.96]

- Time interval n.0: [287.36, 287.56]
 - * y_true: [19.57128016]
 - * v_ann: [24.658702850341797, 19.08174409434031]

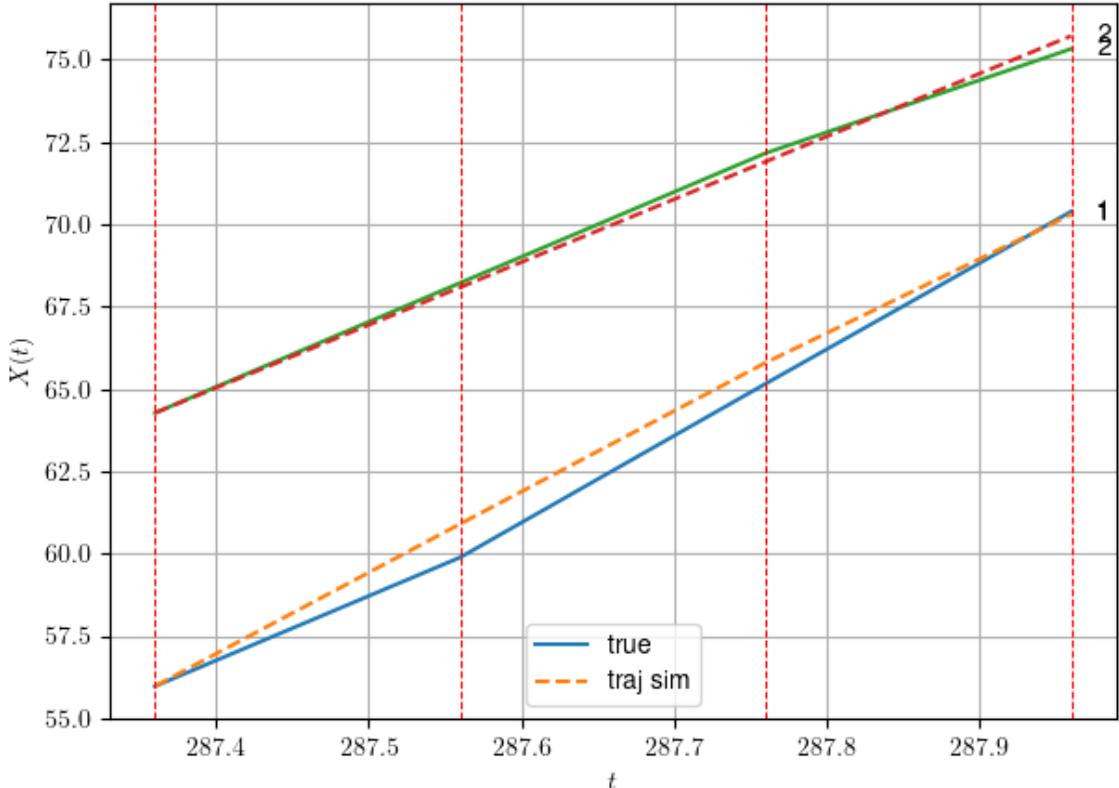
- Time interval n.1: [287.56, 287.76]
 - * y_true: [26.37205005]
 - * v_ann: [24.47004508972168, 19.08174409434031]

- Time interval n.2: [287.76, 287.96]
 - * y_true: [26.13226254]
 - * v_ann: [22.488927841186523, 19.08174409434031]

- * err= 0.21122958498178446
- * Learning rate NN = 5.904899080633186e-05

* diff = 0 0004896342127665987

df n. 2 - Scene n. 27, at it = 500



For scene 27/69

* use LR_NN=0.0001 with err=8.889956208288835 at it=24
 * v0 scn mean = 19.518474330483144
 * MAE = 0.21075581505706042

df n.2, scene n.28/69

We have 3 time intervals inside [292.96, 293.56]

- Time interval n.0: [292.96, 293.16]
 - * y_true: [8.97521593]
 - * v_ann: [10.608063697814941, 19.771247175293336]

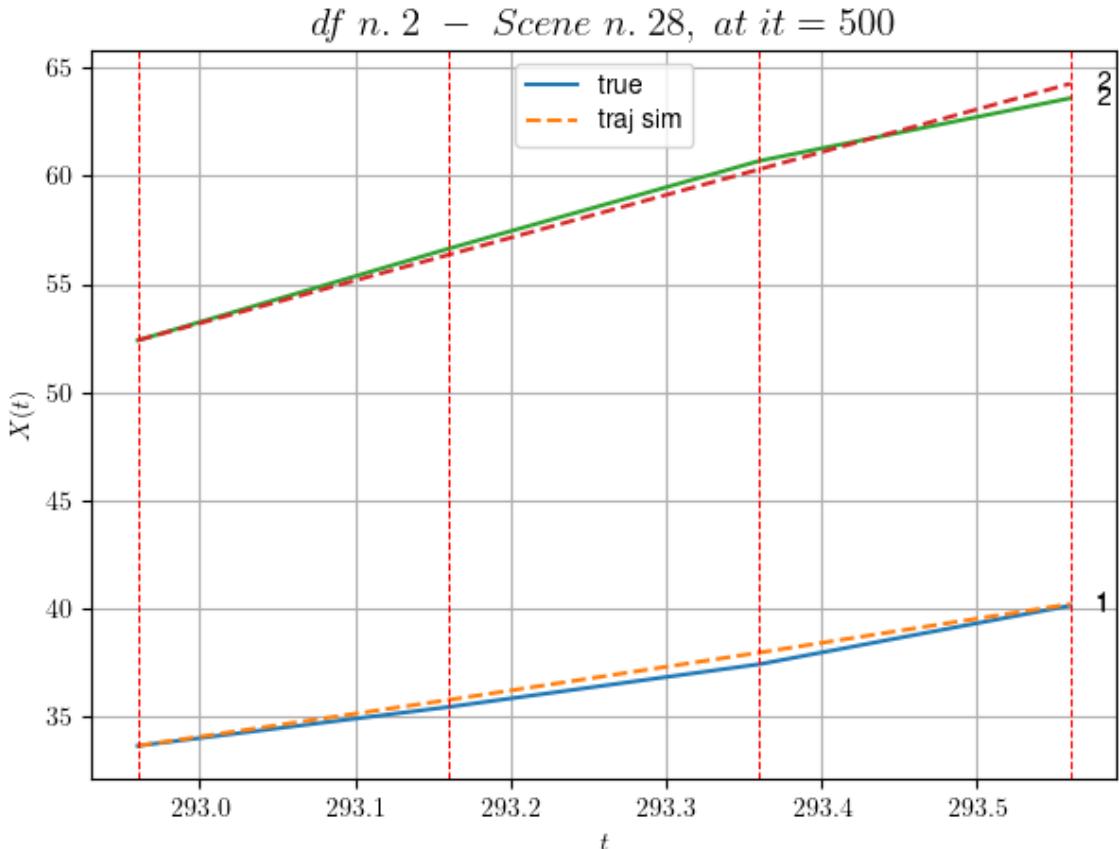
- Time interval n.1: [293.16, 293.36]
 - * y_true: [9.88525546]
 - * v_ann: [10.936235427856445, 19.771247175293336]

- Time interval n.2: [293.36, 293.56]
 - * y_true: [13.52541357]
 - * v_ann: [11.213415145874023, 19.771247175293336]

* err= 0.13485888255134906

* Learning rate NN = 5.904899080633186e-05

* diff = 0.0006026252457014825



For scene 28/69

* use LR_NN=0.0001 with err=7.914602279744074 at it=24
 * v0_scn_mean = 20.18039728820062
 * MAE = 0.13485888255134906

df n.2, scene n.29/69

We have 2 time intervals inside [314.96, 315.36]

- Time interval n.0: [314.96, 315.16]
 - * y_true: [23.83200106]
 - * v_ann: [15.862381935119629, 19.975403002157083]

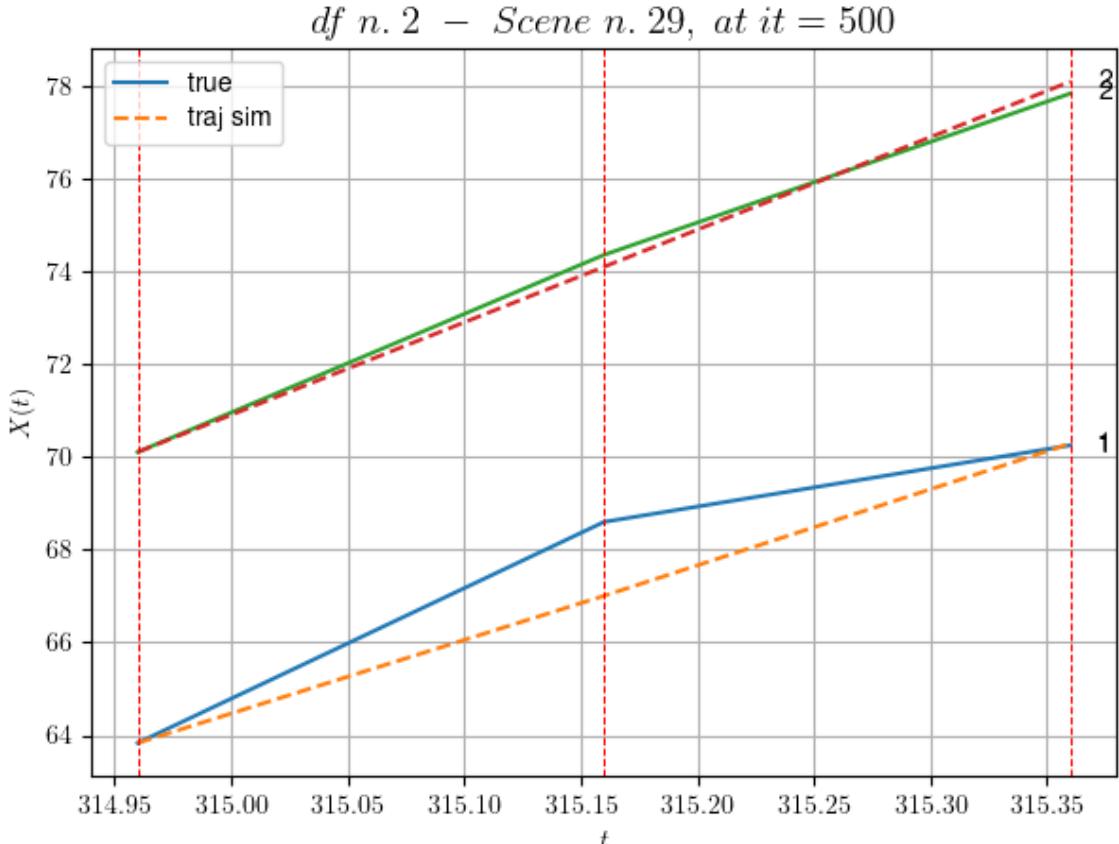
- Time interval n.1: [315.16, 315.36]

- * y_true: [8.26224636]
 - * v_ann: [16.418575286865234, 19.975403002157083]

- * err= 0.4457404368073177

- * Learning rate NN = 0.00036449998151510954

- * diff = 0.00029371742151862446



For scene 29/69

- * use LR_NN=0.0005 with err=3.948877756673472 at it=24
- * v0_scn_mean = 20.376386881991273
- * MAE = 0.4415279034271784

df n.2, scene n.30/69

We have 3 time intervals inside [332.76, 333.36]

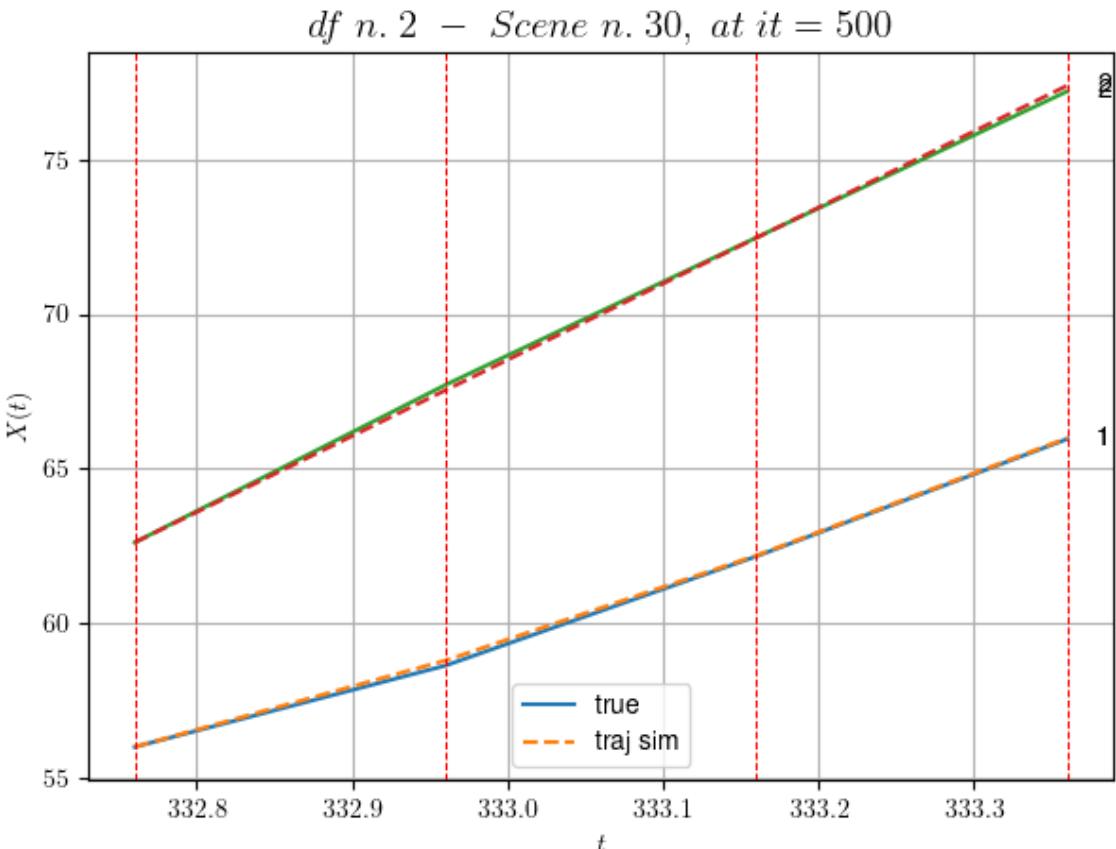
- Time interval n.0: [332.76, 332.96]
 - * y_true: [13.15083663]
 - * v_ann: [13.96731948852539, 24.607227640643536]

- Time interval n.1: [332.96, 333.16]
 - * y_true: [17.65124615]
 - * v_ann: [16.966022491455078, 24.607227640643536]

- Time interval n.2: [333.16, 333.36]
 - * y_true: [18.95150362]
 - * v_ann: [18.980422973632812, 24.607227640643536]

- * err= 0.011581480688032662
- * Learning rate NN = 0.0005904899444431067

* diff = 0.0002458686812880032



For scene 30/69

* use LR_NN=0.001 with err=2.150716311527869 at it=24
 * v0_scn_mean = 24.822938534974565
 * MAE = 0.011581480688032662

df n.2, scene n.31/69

We have 7 time intervals inside [354.76, 356.16]

- Time interval n.0: [354.76, 354.96]
 * y_true: [15.35025294]
 * v_ann: [14.125826835632324, 18.738006349534395]

- Time interval n.1: [354.96, 355.16]
 * y_true: [16.45032349]
 * v_ann: [14.540019989013672, 18.738006349534395]

- Time interval n.2: [355.16, 355.36]
 * y_true: [17.47042754]
 * v_ann: [15.551867485046387, 18.738006349534395]

- Time interval n.3: [355.36, 355.56]

```
* y_true: [15.05042697]
* v_ann: [16.621450424194336, 18.738006349534395]
```

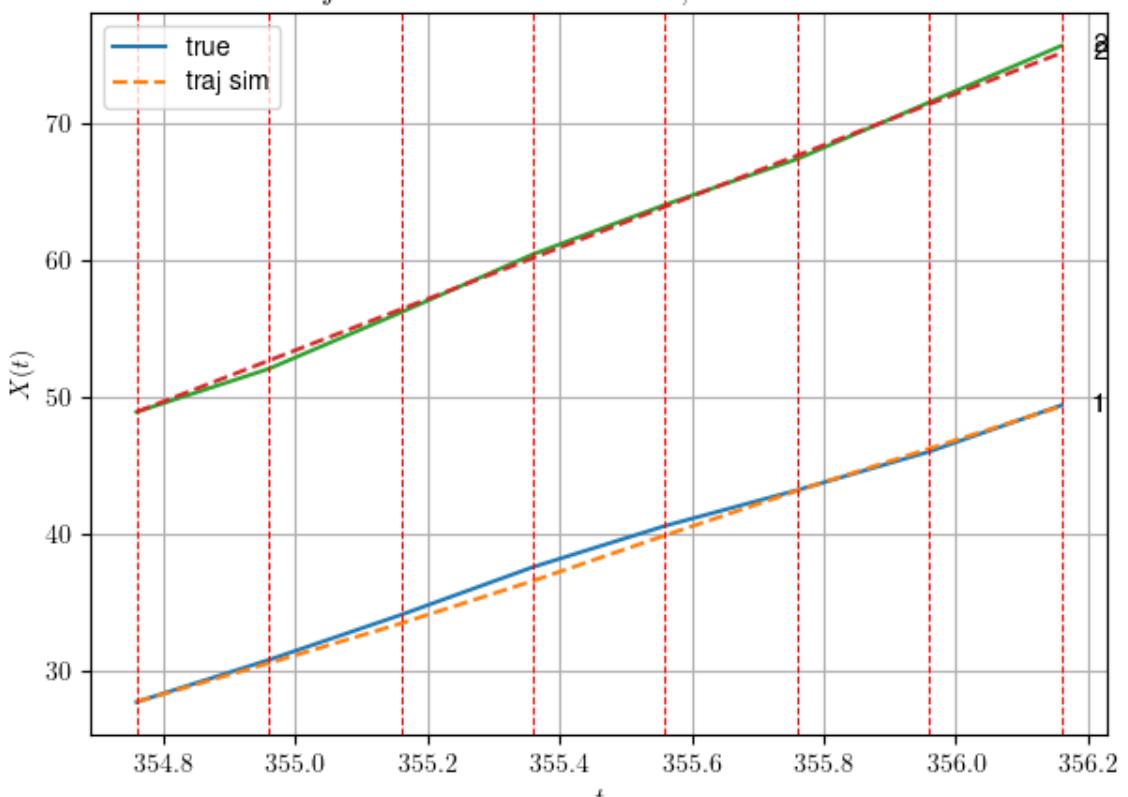
```
- Time interval n.4: [355.56, 355.76]
* y_true: [13.05043358]
* v_ann: [16.31681251525879, 18.738006349534395]
```

```
- Time interval n.5: [355.76, 355.96]
* y_true: [14.08053077]
* v_ann: [15.380219459533691, 18.738006349534395]
```

```
- Time interval n.6: [355.96, 356.16]
* y_true: [16.93073503]
* v_ann: [15.454785346984863, 18.738006349534395]
```

```
* err= 0.18034438954064325
* Learning rate NN = 0.00025418648147024214
* diff = 0.005774626262824323
```

df n. 2 – Scene n. 31, at it = 500

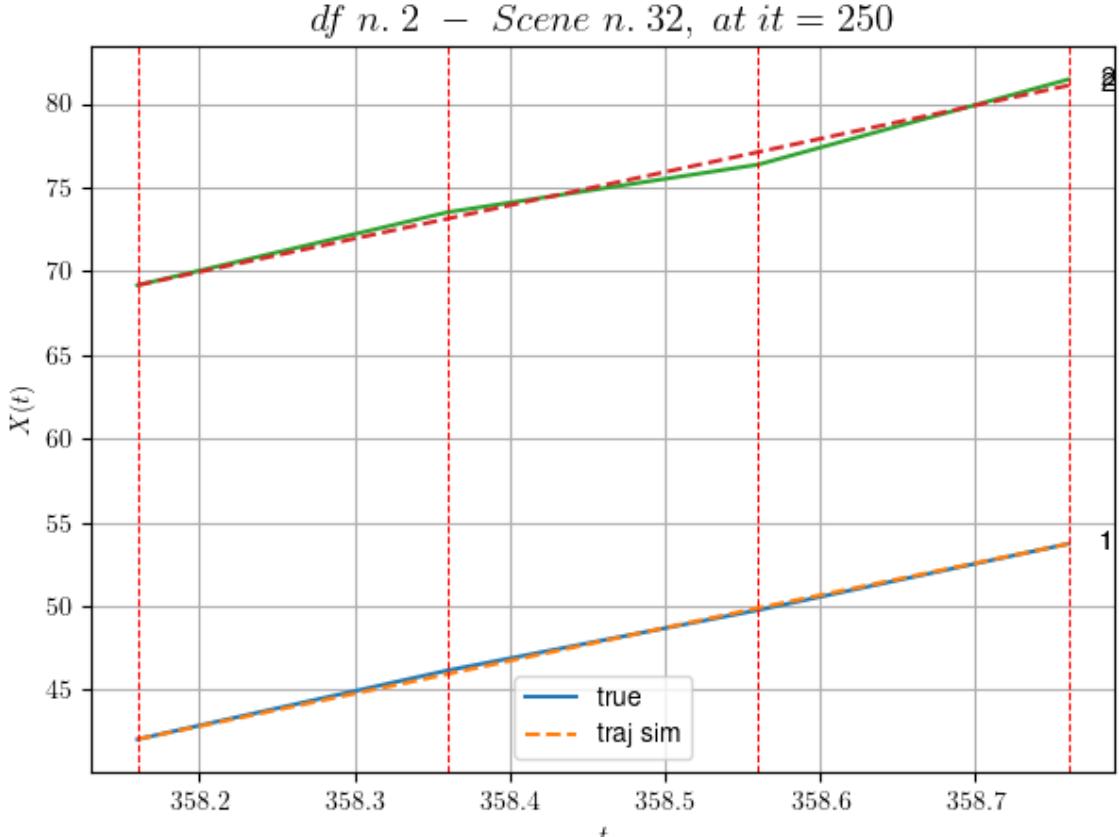


For scene 31/69

```
* use LR_NN=0.001 with err=43.47858532302726 at it=24
* v0_scn_mean = 19.18848609546727
* MAE = 0.09422589892149566
```

```
df n.2, scene n.32/69
```

We have 3 time intervals inside [358.16,358.76]
 * err= 0.11323555153281956
 * Learning rate NN = 4.049999552080408e-05
 * diff = 3.7982426645544187e-07



For scene 32/69

- * use LR_NN=5e-05 with err=7.297702909911062 at it=24
- * v0_scn_mean = 20.686927810675662
- * MAE = 0.11323554247828974

```
df n.2, scene n.33/69
```

We have 4 time intervals inside [362.36,363.16]

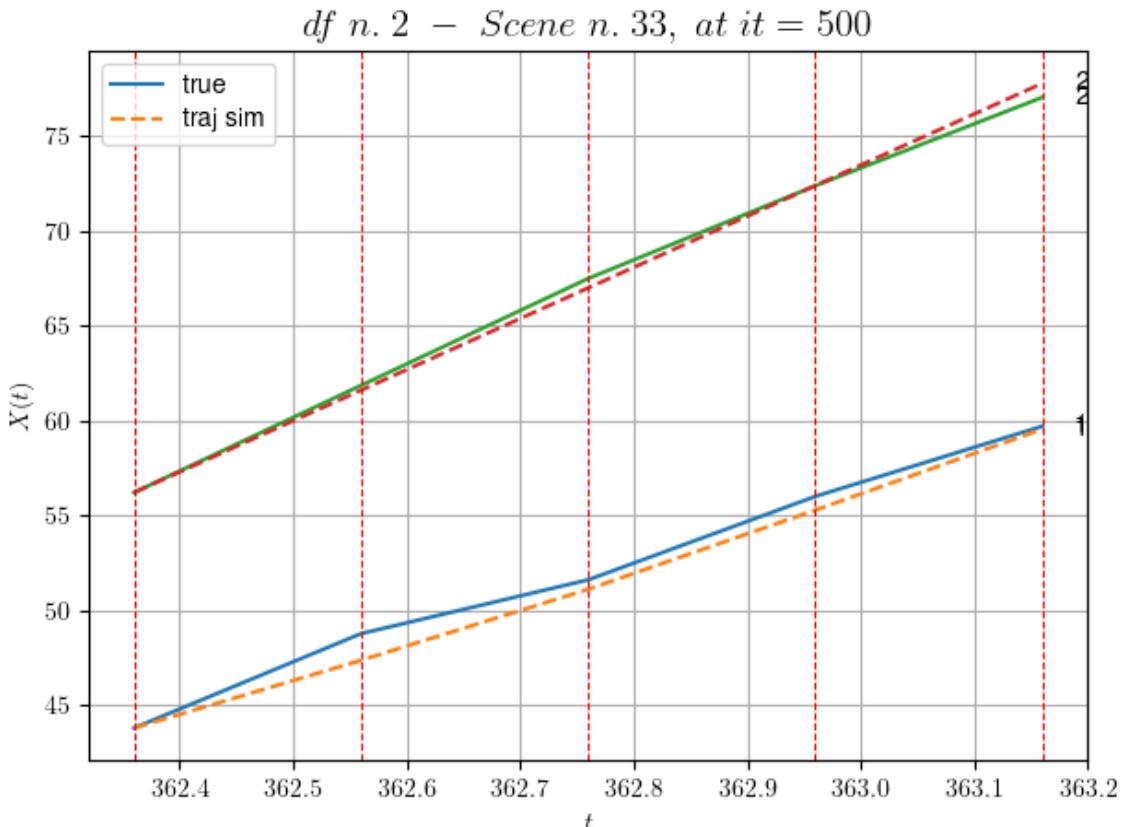
- Time interval n.0: [362.36, 362.56]
 - * y_true: [24.84104061]
 - * v_ann: [17.816640853881836, 26.931159292589527]

- Time interval n.1: [362.56, 362.76]
 - * y_true: [14.1606775]
 - * v_ann: [18.697765350341797, 26.931159292589527]

- Time interval n.2: [362.76, 362.96]
 - * y_true: [21.95124893]
 - * v_ann: [20.83568000793457, 26.931159292589527]

- Time interval n.3: [362.96, 363.16]
 - * y_true: [18.48118796]
 - * v_ann: [21.32656478881836, 26.931159292589527]

```
* err= 0.36187343992269605  
* Learning rate NN = 4.7829678806010634e-05  
* diff = 0.0012027430867995736
```



For scene 33/69
* use LR_NN=0.0001 with err=1.8807309269420924 at it=24
* v0_scn_mean = 27.05391292086083
* MAF = 0.36063201377143217

df n? scene n 34/69

```
We have 5 time intervals inside [365.16,366.16]
  - Time interval n.0: [365.16, 365.36]
    * y_true: [16.50108755]
    * v_ann: [17.62240982055664, 23.672070636508472]
```

```

-----  

- Time interval n.1: [365.36, 365.56]  

  * y_true: [18.10133819]  

  * v_ann: [17.152828216552734, 23.672070636508472]
-----
```

```

-----  

- Time interval n.2: [365.56, 365.76]  

  * y_true: [23.65199157]  

  * v_ann: [18.029878616333008, 23.672070636508472]
-----
```

```

-----  

- Time interval n.3: [365.76, 365.96]  

  * y_true: [16.90160161]  

  * v_ann: [22.802112579345703, 23.672070636508472]
-----
```

```

-----  

- Time interval n.4: [365.96, 366.16]  

  * y_true: [23.30246885]  

  * v_ann: [22.22360610961914, 23.672070636508472]
-----
```

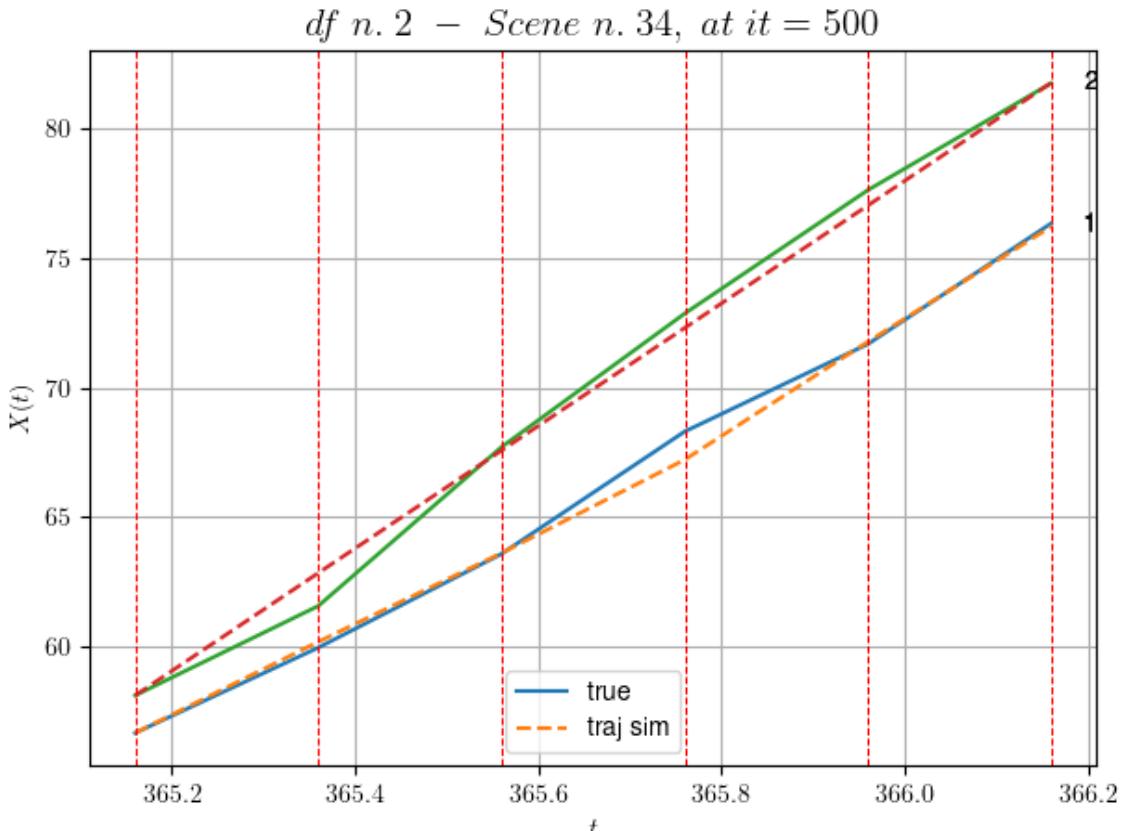
```

* err= 0.2973748566019591  

* Learning rate NN = 0.0019371019443497062  

* diff = 0.0002615018200722

```



For scene 34/69

```

* use LR_NN=0.005 with err=7.022348407195571 at it=24
* v0_scn_mean = 23.92518781099903
* MAE = 0.2973748566019591

```

```
=====
=====

df n.2, scene n.35/69
=====
=====

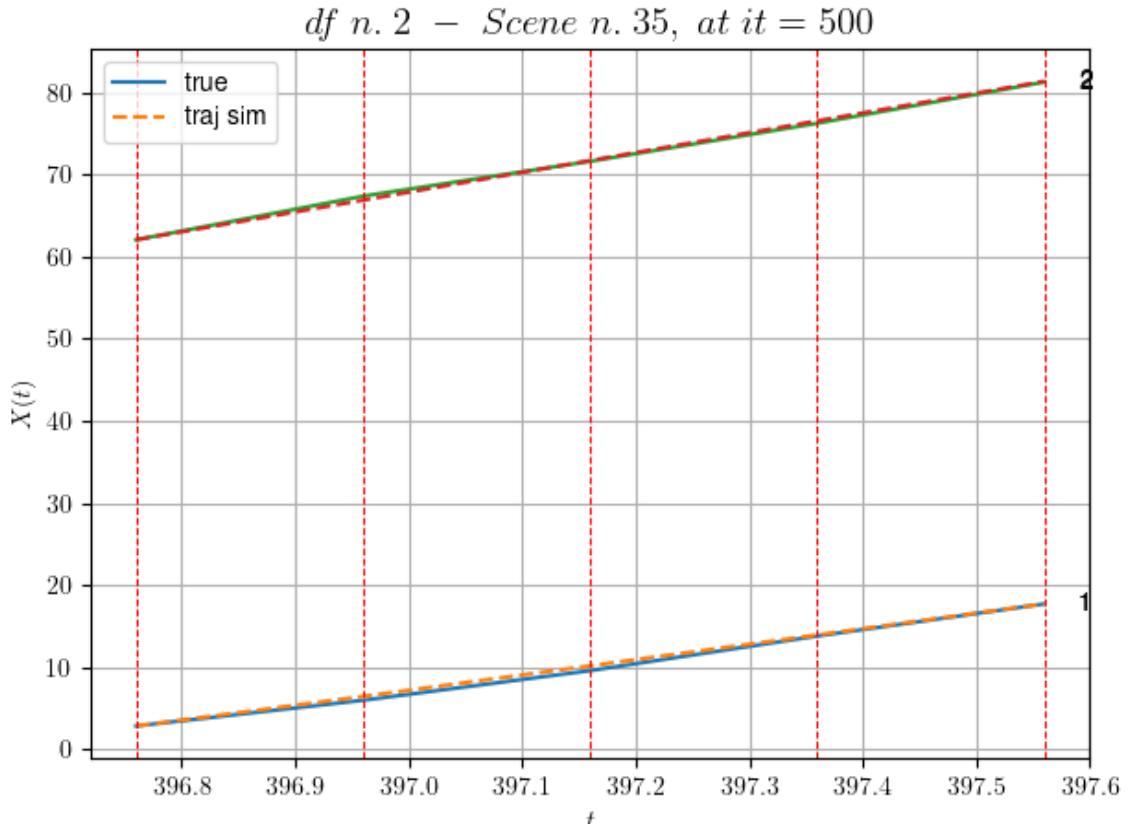
We have 4 time intervals inside [396.76,397.56]
- Time interval n.0: [396.76, 396.96]
  * y_true: [15.65000795]
  * v_ann: [18.00849151611328, 24.12224481572964]

-----
- Time interval n.1: [396.96, 397.16]
  * y_true: [18.06002531]
  * v_ann: [18.61948013305664, 24.12224481572964]

-----
- Time interval n.2: [397.16, 397.36]
  * y_true: [21.04006026]
  * v_ann: [18.797136306762695, 24.12224481572964]

-----
- Time interval n.3: [397.36, 397.56]
  * y_true: [19.54009809]
  * v_ann: [18.978334426879883, 24.12224481572964]

-----
* err= 0.09220822480415752
* Learning rate NN = 4.782968062500004e-06
* diff = 6.765750729237352e-05
```



For scene 35/69

```
* use LR_NN=1e-05 with err=4.4701893460188336 at it=24
* v0_scn_mean = 24.357355023055547
* MAE = 0.09197359806925666
```

df n.2, scene n.36/69

We have 5 time intervals inside [399.56, 400.56]

- Time interval n.0: [399.56, 399.76]
 - * y_true: [22.65080888]
 - * v_ann: [17.893522262573242, 22.2859014840285]

- Time interval n.1: [399.76, 399.96]
 - * y_true: [15.05063497]
 - * v_ann: [17.80569076538086, 22.2859014840285]

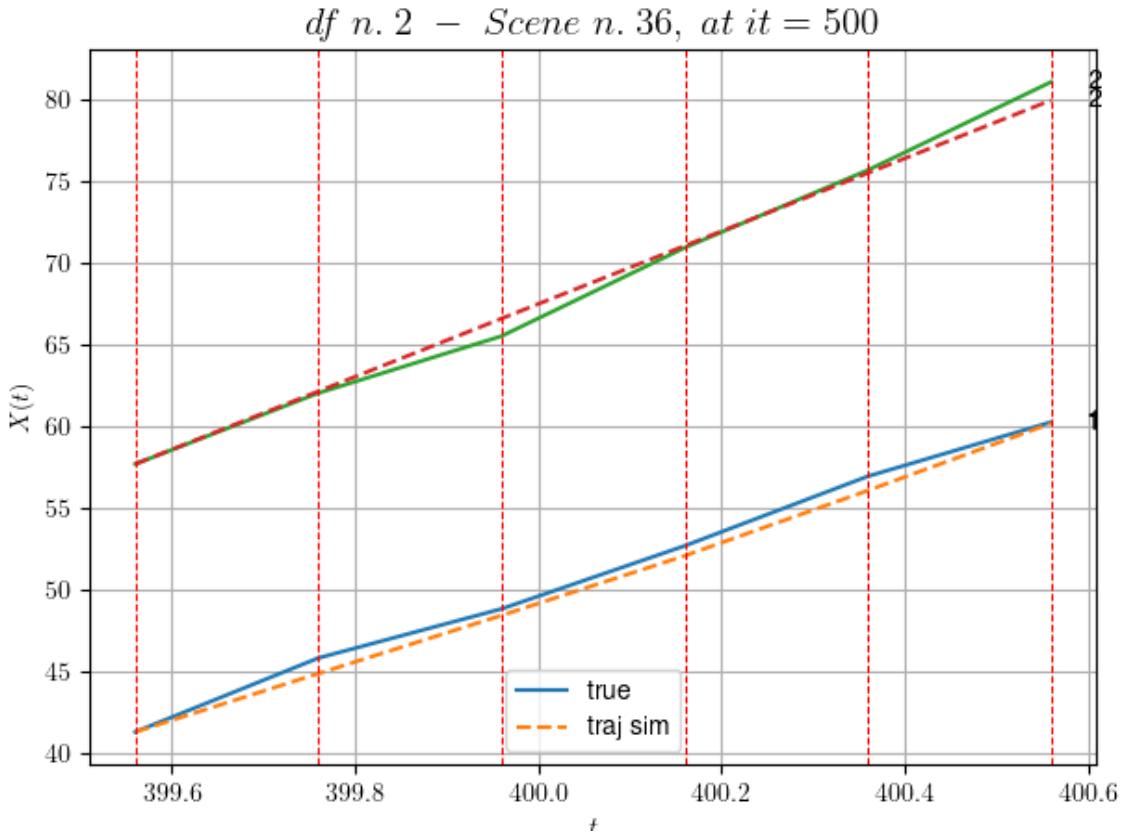
- Time interval n.2: [399.96, 400.16]
 - * y_true: [19.30093791]
 - * v_ann: [18.267364501953125, 22.2859014840285]

- Time interval n.3: [400.16, 400.36]
 - * y_true: [21.30120859]

```
* v_ann: [19.987228393554688, 22.2859014840285]
```

- Time interval n.4: [400.36, 400.56]
 - * y_true: [16.60107718]
 - * v_ann: [20.56540298461914, 22.2859014840285]

- * err= 0.38854625767398077
- * Learning rate NN = 1.9371018424862996e-05
- * diff = 0.00055180012015277712



For scene 36/69

- * use LR_NN=5e-05 with err=10.369160474948304 at it=24
- * v0_scn_mean = 22.594465424608643
- * MAE = 0.37553069566122194

df n.2, scene n.37/69

We have 4 time intervals inside [411.36, 412.16]

- Time interval n.0: [411.36, 411.56]
 - * y_true: [25.28122446]
 - * v_ann: [23.57427978515625, 24.337743181531174]

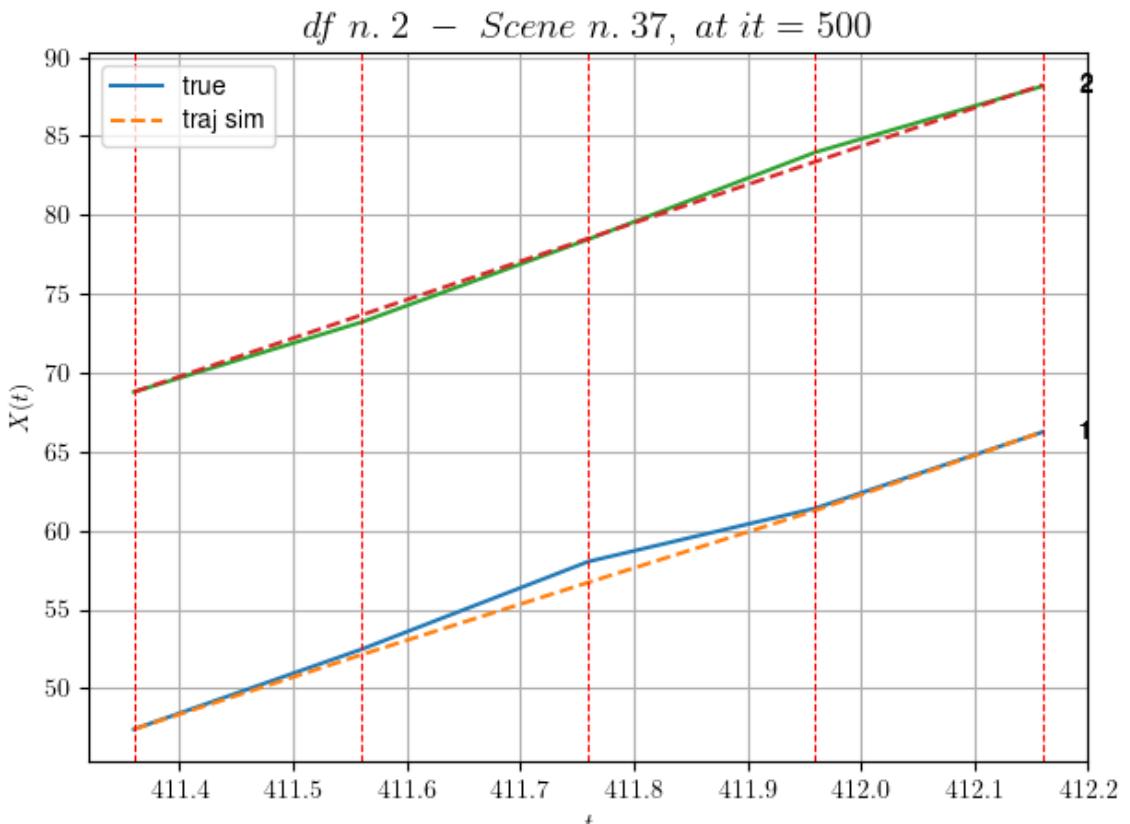
- Time interval n.1: [411.56, 411.76]
 - * y_true: [27.86165985]

```
* v_ann: [22.948192596435547, 24.337743181531174]
```

```
- Time interval n.2: [411.76, 411.96]
* y_true: [16.92114849]
* v_ann: [22.825775146484375, 24.337743181531174]
```

```
- Time interval n.3: [411.96, 412.16]
* y_true: [24.16192805]
* v_ann: [24.92157745361328, 24.337743181531174]
```

```
* err= 0.24627681170585655
* Learning rate NN = 2.3914839403005317e-05
* diff = 4.131136831389548e-05
```



For scene 37/69

```
* use LR_NN=5e-05 with err=3.9039794648069788 at it=24
* v0_scn_mean = 24.564233454227068
* MAE = 0.24427735287625735
```

df n.2, scene n.38/69

We have 3 time intervals inside [413.96, 414.56]
- Time interval n.0: [413.96, 414.16]

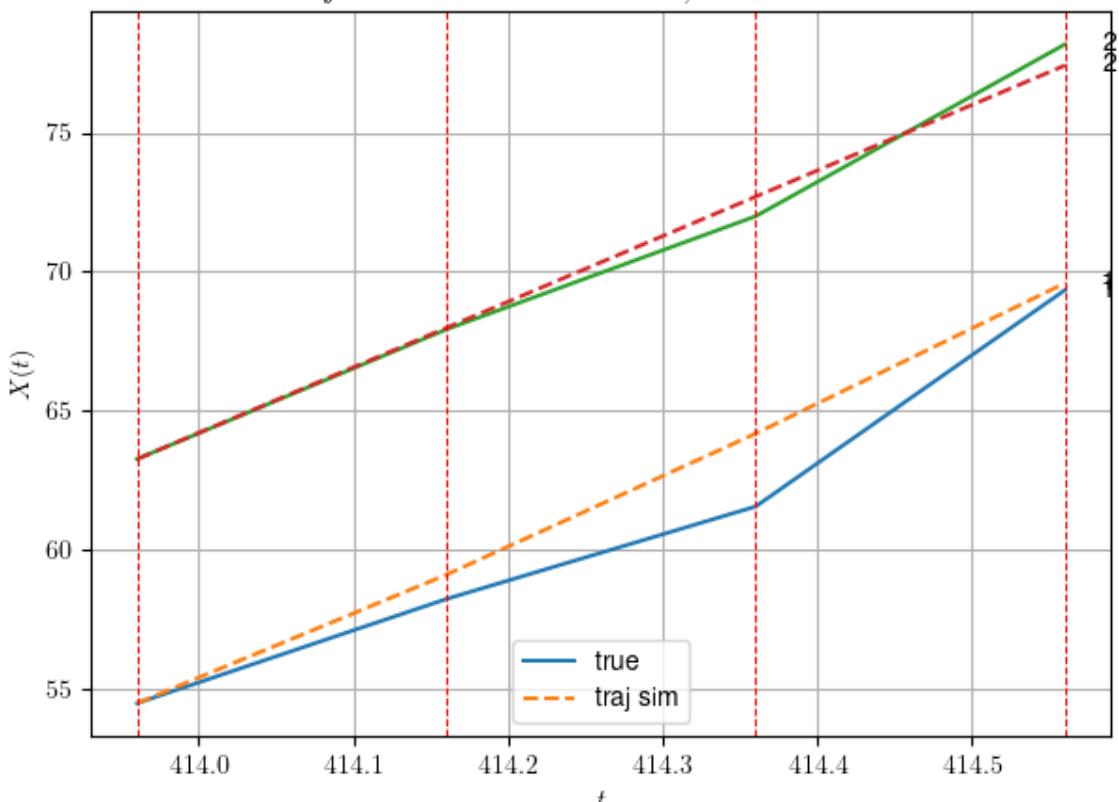
```
* y_true: [18.75115567]
* v_ann: [23.12478256225586, 23.615524542917022]
```

```
- Time interval n.1: [414.16, 414.36]
* y_true: [16.65115772]
* v_ann: [25.406248092651367, 23.615524542917022]
```

```
- Time interval n.2: [414.36, 414.56]
* y_true: [38.95323614]
* v_ann: [27.06620216369629, 23.615524542917022]
```

```
* err= 1.0999761536444825
* Learning rate NN = 2.952449540316593e-05
* diff = 0.00021002807522286775
```

df n. 2 – Scene n. 38, at it = 500



For scene 38/69

```
* use LR_NN=5e-05 with err=3.300685480189823 at it=24
* v0_scn_mean = 23.870903561151025
* MAE = 1.0271866336059472
```

df n.2, scene n.39/69

We have 6 time intervals inside [428.56, 429.76]

```
- Time interval n.0: [428.56, 428.76]
 * y_true: [22.45041238]
 * v_ann: [21.923198699951172, 19.277810356523286]

-----
- Time interval n.1: [428.76, 428.96]
 * y_true: [16.60039646]
 * v_ann: [21.69972801208496, 19.277810356523286]

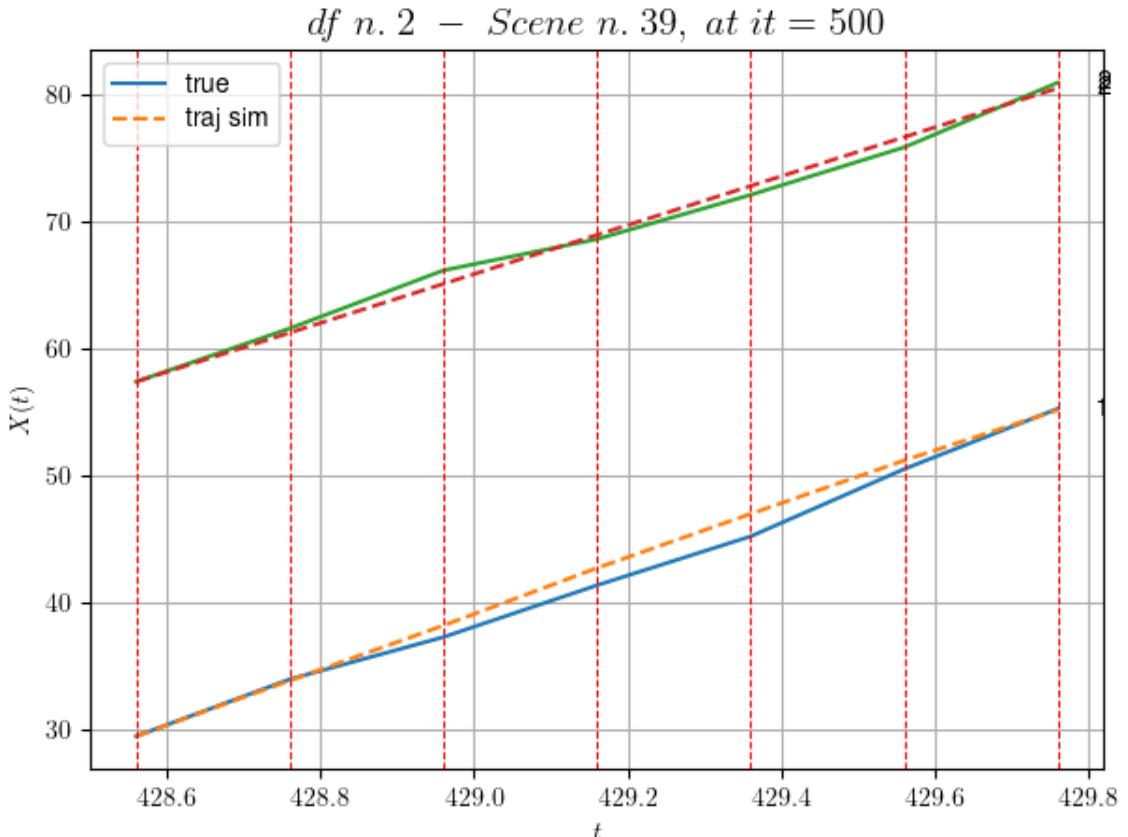
-----
- Time interval n.2: [428.96, 429.16]
 * y_true: [20.43058574]
 * v_ann: [22.641096115112305, 19.277810356523286]

-----
- Time interval n.3: [429.16, 429.36]
 * y_true: [19.26068658]
 * v_ann: [21.349477767944336, 19.277810356523286]

-----
- Time interval n.4: [429.36, 429.56]
 * y_true: [26.54113816]
 * v_ann: [21.050973892211914, 19.277810356523286]

-----
- Time interval n.5: [429.56, 429.76]
 * y_true: [23.79124092]
 * v_ann: [19.868812561035156, 19.277810356523286]

-----
* err= 0.6423421765338708
* Learning rate NN = 3.138104830213706e-06
* diff = 0.0001615561250241056
```



For scene 39/69

```
* use LR_NN=1e-05 with err=31.223314245218365 at it=24
* v0_scn_mean = 19.706697942180284
* MAE = 0.6412882519799219
```

df n.2, scene n.40/69

We have 6 time intervals inside [440.16, 441.36]

- Time interval n.0: [440.16, 440.36]
 - * y_true: [14.31004489]
 - * v_ann: [12.208134651184082, 23.380815312671263]

- Time interval n.1: [440.36, 440.56]
 - * y_true: [12.62005482]
 - * v_ann: [12.400815963745117, 23.380815312671263]

- Time interval n.2: [440.56, 440.76]
 - * y_true: [11.89007243]
 - * v_ann: [13.145541191101074, 23.380815312671263]

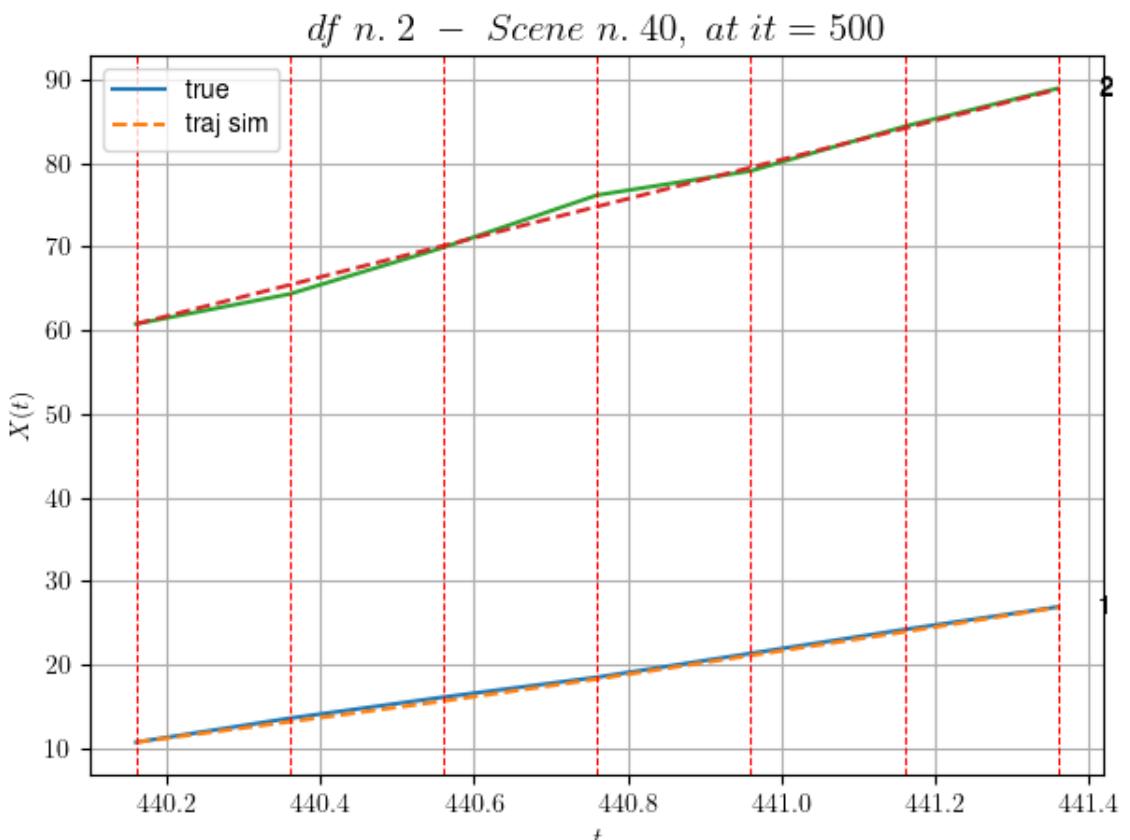
- Time interval n.3: [440.76, 440.96]
 - * y_true: [14.2801147]

* v_ann: [14.082881927490234, 23.380815312671263]

- Time interval n.4: [440.96, 441.16]
 * y_true: [14.25014591]
 * v_ann: [14.093388557434082, 23.380815312671263]

- Time interval n.5: [441.16, 441.36]
 * y_true: [13.55017504]
 * v_ann: [14.699163436889648, 23.380815312671263]

* err= 0.282369302020732
 * Learning rate NN = 3.138104830213706e-06
 * diff = 1.775462829550767e-05



For scene 40/69

* use LR_NN=1e-05 with err=11.130107980815664 at it=24
 * v0_scn_mean = 23.645582700114165
 * MAE = 0.27656615516917693

df n.2, scene n.41/69

We have 7 time intervals inside [442.36, 443.76]
 - Time interval n.0: [442.36, 442.56]

```
* y_true: [12.43042647]
* v_ann: [12.530221939086914, 21.85795817065097]

-----
- Time interval n.1: [442.56, 442.76]
* y_true: [15.80061825]
* v_ann: [12.582146644592285, 21.85795817065097]

-----
- Time interval n.2: [442.76, 442.96]
* y_true: [13.31057742]
* v_ann: [13.452658653259277, 21.85795817065097]

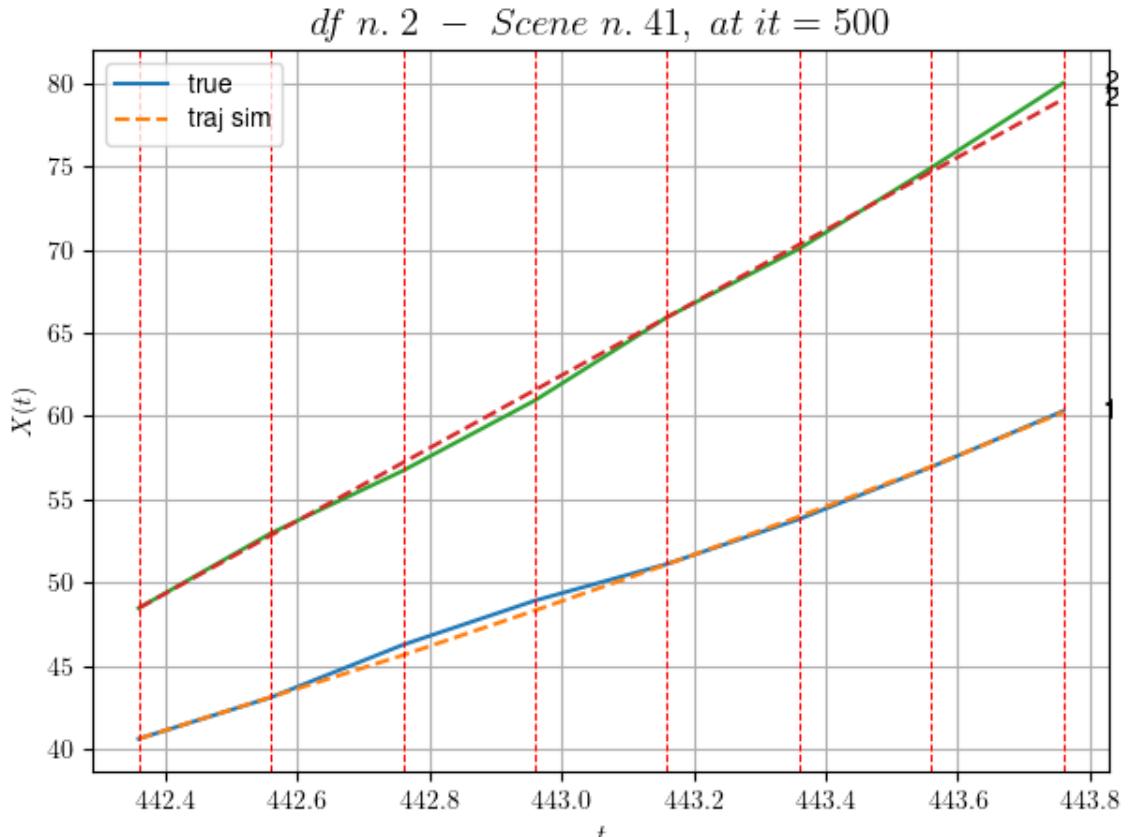
-----
- Time interval n.3: [442.96, 443.16]
* y_true: [11.01053508]
* v_ann: [13.859131813049316, 21.85795817065097]

-----
- Time interval n.4: [443.16, 443.36]
* y_true: [13.47072378]
* v_ann: [14.383376121520996, 21.85795817065097]

-----
- Time interval n.5: [443.36, 443.56]
* y_true: [15.67093348]
* v_ann: [15.011016845703125, 21.85795817065097]

-----
- Time interval n.6: [443.56, 443.76]
* y_true: [16.84112333]
* v_ann: [16.387298583984375, 21.85795817065097]

-----
* err= 0.1555154597287474
* Learning rate NN = 0.00025418648147024214
* diff = 0.0034073886600560044
```



For scene 41/69

* use LR_NN=0.001 with err=23.019399833968453 at it=24
 * v0_scn_mean = 22.18363984376393
 * MAE = 0.1555154597287474

df n.2, scene n.42/69

We have 5 time intervals inside [483.16, 484.16]

- Time interval n.0: [483.16, 483.36]
 - * y_true: [13.10044424]
 - * v_ann: [14.580438613891602, 18.470290902700157]

- Time interval n.1: [483.36, 483.56]
 - * y_true: [11.80044885]
 - * v_ann: [15.08690357208252, 18.470290902700157]

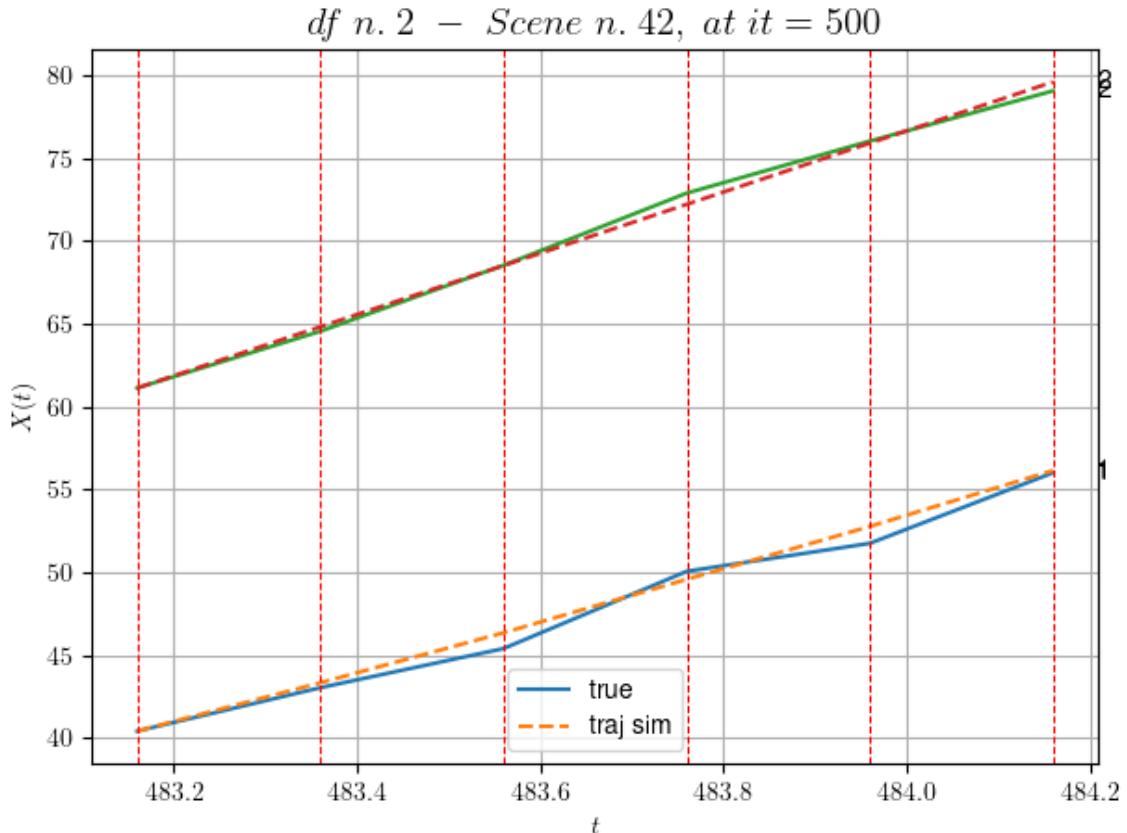
- Time interval n.2: [483.56, 483.76]
 - * y_true: [23.3010318]
 - * v_ann: [16.122570037841797, 18.470290902700157]

- Time interval n.3: [483.76, 483.96]
 - * y_true: [8.45042492]

```
* v_ann: [15.962963104248047, 18.470290902700157]
```

- Time interval n.4: [483.96, 484.16]
 - * y_true: [21.30119954]
 - * v_ann: [16.871807098388672, 18.470290902700157]

- * err= 0.2605704418541376
- * Learning rate NN = 3.874203684972599e-06
- * diff = 0.00032860082488556097



For scene 42/69

- * use LR_NN=1e-05 with err=24.76330013626989 at it=24
- * v0_scn_mean = 18.93147926650468
- * MAE = 0.26042522720945394

df n.2, scene n.43/69

We have 3 time intervals inside [494.76, 495.36]

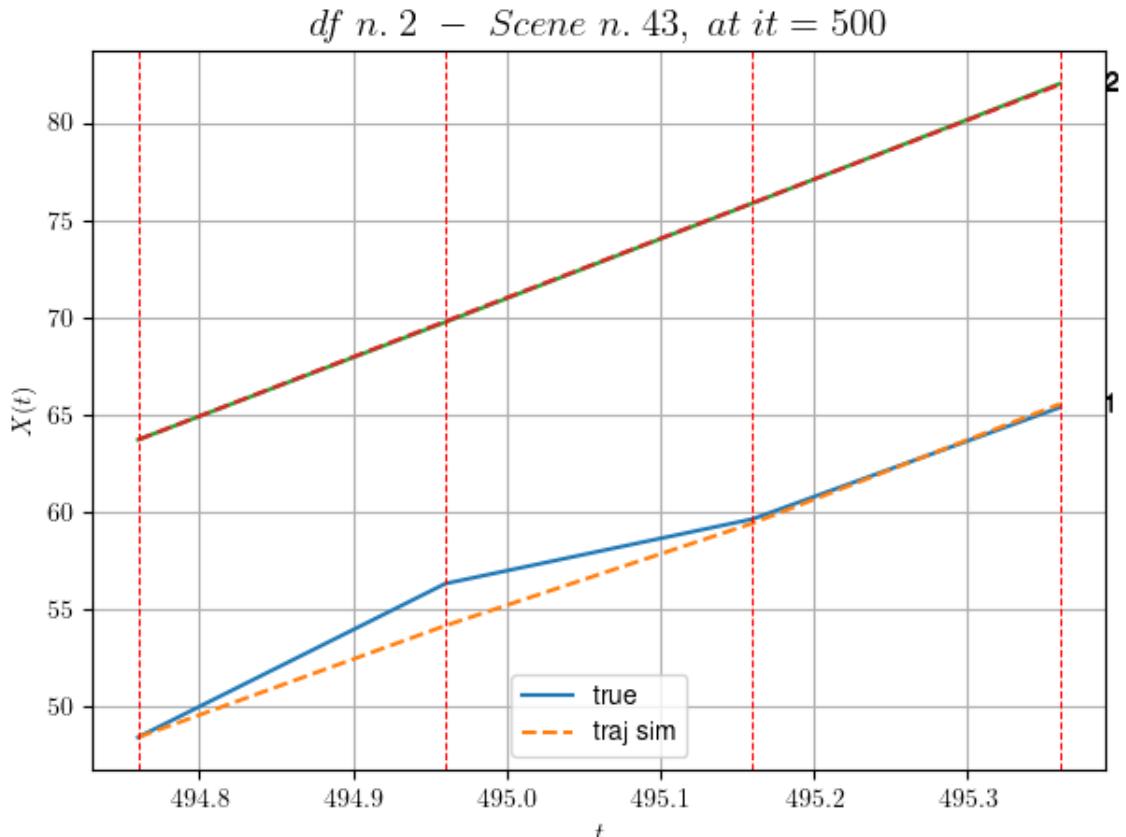
- Time interval n.0: [494.76, 494.96]
 - * y_true: [39.5021068]
 - * v_ann: [28.695369720458984, 30.442979864263386]

- Time interval n.1: [494.96, 495.16]

```
* y_true: [16.60108256]
* v_ann: [26.333518981933594, 30.442979864263386]
```

```
- Time interval n.2: [495.16, 495.36]
* y_true: [28.7021737]
* v_ann: [30.643020629882812, 30.442979864263386]
```

```
* err= 0.5940111744649083
* Learning rate NN = 5.904899080633186e-05
* diff = 3.025466032061289e-05
```



For scene 43/69

```
* use LR_NN=0.0001 with err=0.6416441606105385 at it=24
* v0_scn_mean = 30.42526066969608
* MAE = 0.5877662837199211
```

df n.2, scene n.44/69

We have 7 time intervals inside [513.16, 514.56]

```
- Time interval n.0: [513.16, 513.36]
* y_true: [21.8303416]
* v_ann: [21.180187225341797, 22.16942692857554]
```

- Time interval n.1: [513.36, 513.56]

```
* y_true: [22.29045729]
* v_ann: [20.81850814819336, 22.16942692857554]
```

```
-----  
-----  
- Time interval n.2: [513.56, 513.76]  
* y_true: [18.24046898]  
* v_ann: [20.84881591796875, 22.16942692857554]
```

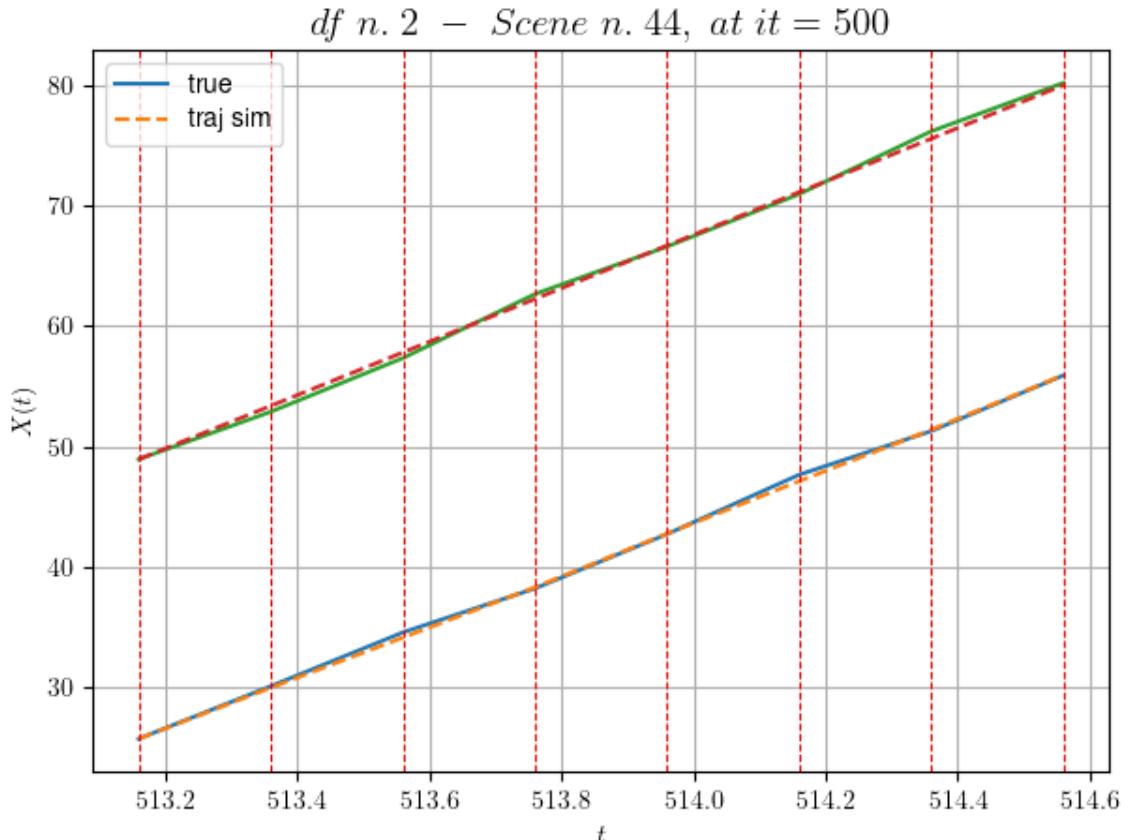
```
-----  
-----  
- Time interval n.3: [513.76, 513.96]  
* y_true: [22.54072782]  
* v_ann: [22.273155212402344, 22.16942692857554]
```

```
-----  
-----  
- Time interval n.4: [513.96, 514.16]  
* y_true: [24.65098297]  
* v_ann: [21.76942253112793, 22.16942692857554]
```

```
-----  
-----  
- Time interval n.5: [514.16, 514.36]  
* y_true: [18.09085031]  
* v_ann: [21.3309326171875, 22.16942692857554]
```

```
-----  
-----  
- Time interval n.6: [514.36, 514.56]  
* y_true: [23.12130086]  
* v_ann: [22.67238426208496, 22.16942692857554]
```

```
-----  
-----  
* err= 0.0995609059839146  
* Learning rate NN = 1.2709323527815286e-05  
* diff = 7.283859366521983e-05
```



For scene 44/69

```
* use LR_NN=5e-05 with err=20.847844657577447 at it=24
* v0_scn_mean = 22.482649851372035
* MAE = 0.09513137587168308
```

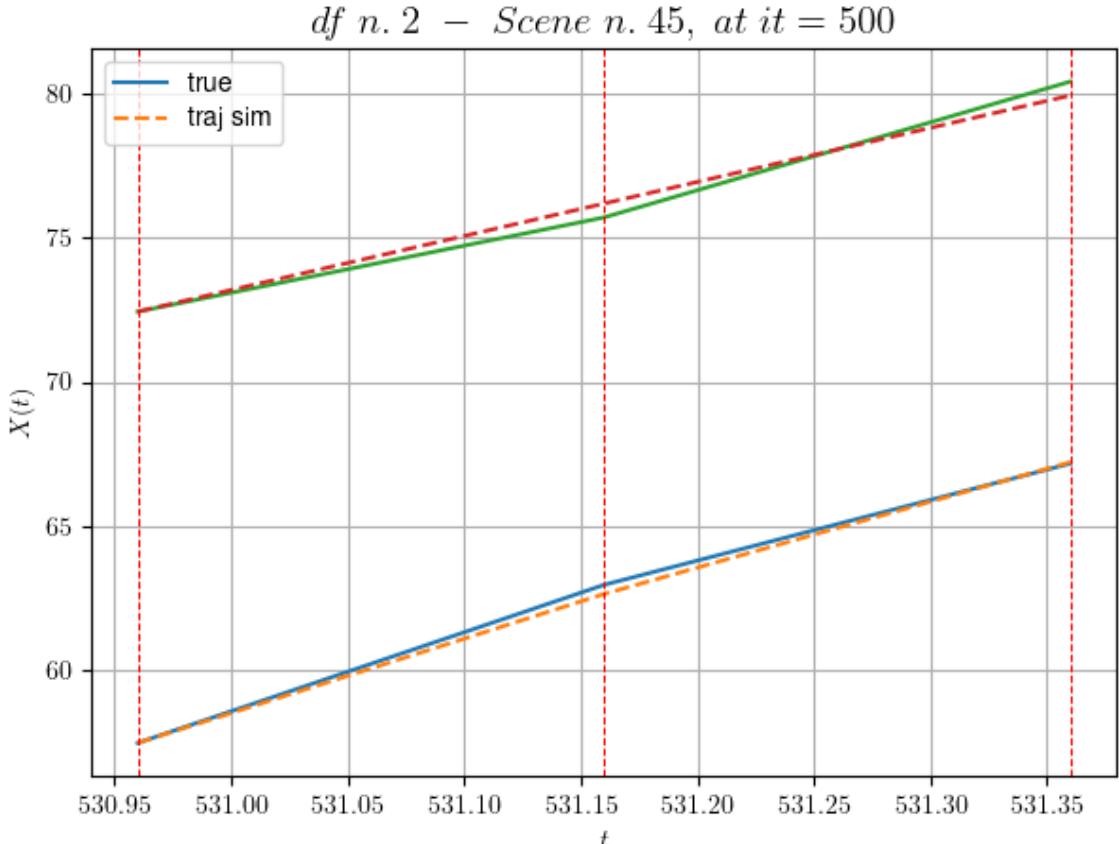
df n.2, scene n.45/69

We have 2 time intervals inside [530.96, 531.36]

- Time interval n.0: [530.96, 531.16]
 - * y_true: [27.47191731]
 - * v_ann: [25.880922317504883, 18.78540832306856]

- Time interval n.1: [531.16, 531.36]
 - * y_true: [21.08169407]
 - * v_ann: [22.913326263427734, 18.78540832306856]

- * err= 0.09494023662842042
 - * Learning rate NN = 0.00036449998151510954
 - * diff = 4.533057833863707e-05



For scene 45/69

- * use LR_NN=0.0005 with err=3.9278868309179837 at it=24
- * v0_scn_mean = 19.23399199006053
- * MAE = 0.0932194449710371

df n.2, scene n.46/69

We have 4 time intervals inside [534.96, 535.76]

- Time interval n.0: [534.96, 535.16]
 - * y_true: [18.70035331]
 - * v_ann: [19.777610778808594, 22.62172536445437]

- Time interval n.1: [535.16, 535.36]
 - * y_true: [23.55057295]
 - * v_ann: [20.36028480529785, 22.62172536445437]

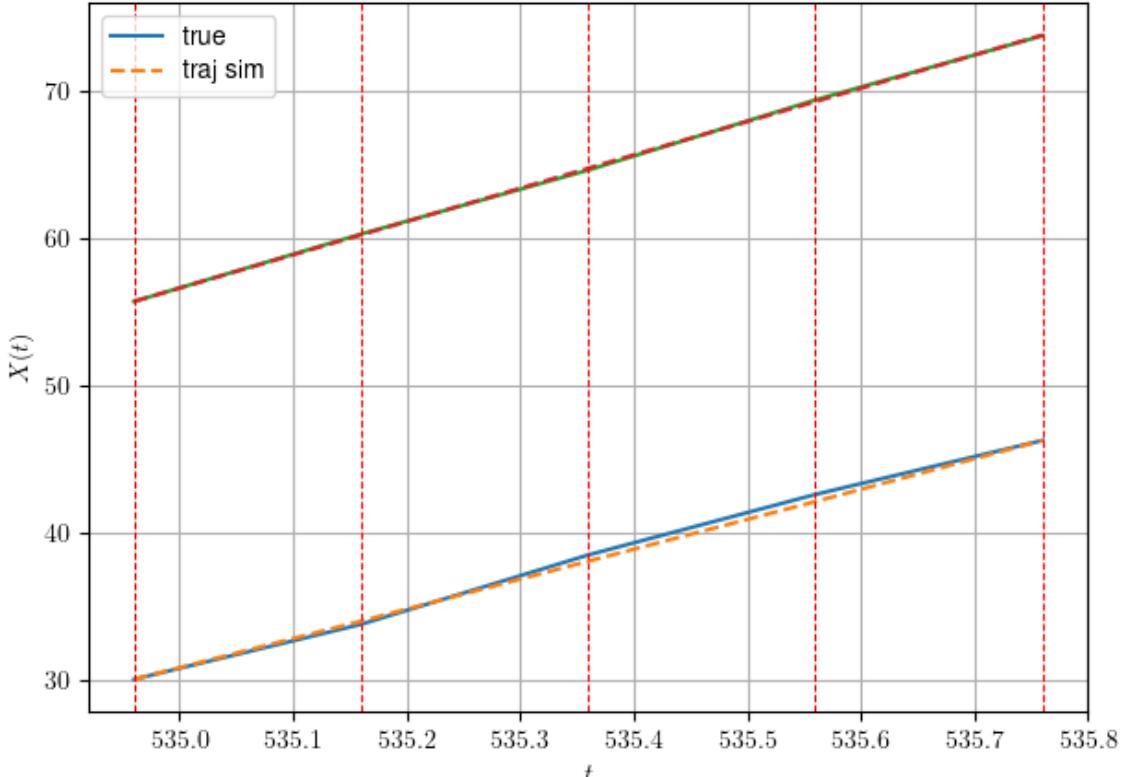
- Time interval n.2: [535.36, 535.56]
 - * y_true: [20.55063096]
 - * v_ann: [20.243844985961914, 22.62172536445437]

- Time interval n.3: [535.56, 535.76]
 - * y_true: [18.350678]

```
* v_ann: [20.762920379638672, 22.62172536445437]
```

```
* err= 0.04948019866612234
* Learning rate NN = 2.3914839403005317e-05
* diff = 9.60097550300118e-05
```

df n. 2 – Scene n. 46, at it = 500



For scene 46/69

```
* use LR_NN=5e-05 with err=6.596707994386256 at it=24
* v0_scn_mean = 22.916856349819636
* MAE = 0.04935551559280375
```

df n.2, scene n.47/69

We have 2 time intervals inside [547.76, 548.16]

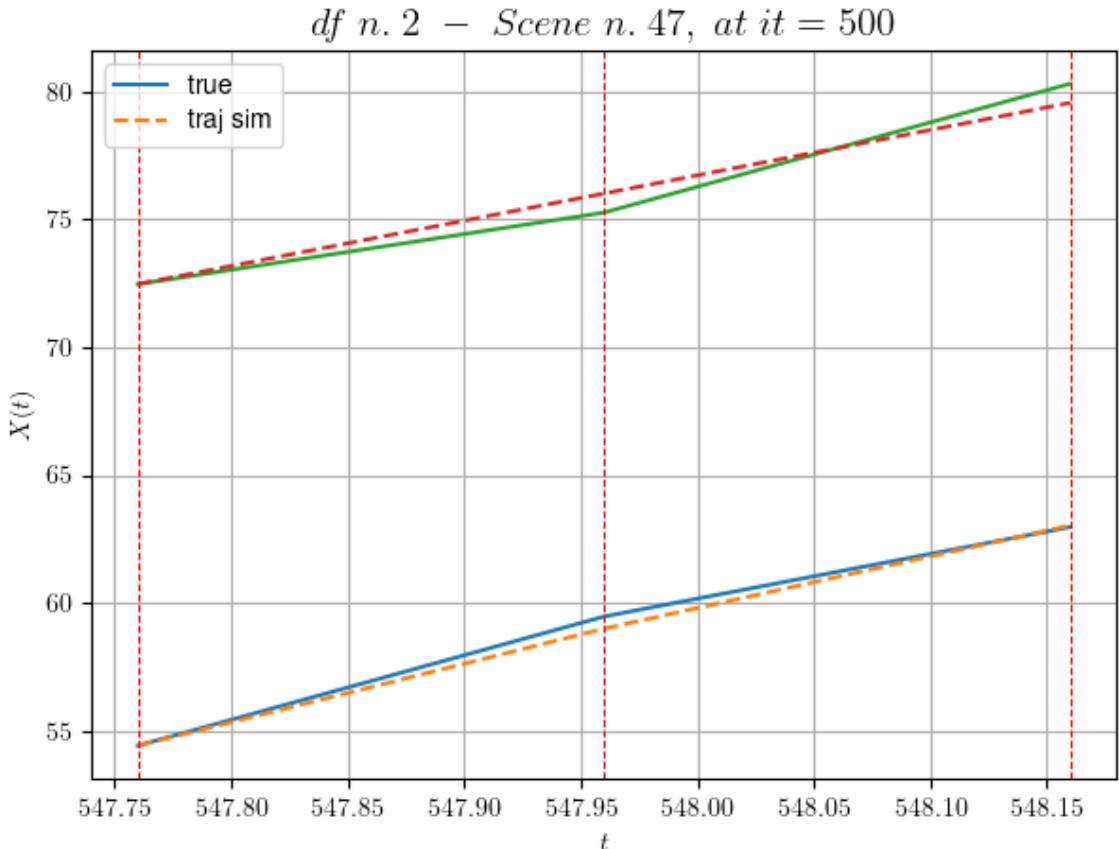
- Time interval n.0: [547.76, 547.96]
 - * y_true: [25.25158957]
 - * v_ann: [22.874670028686523, 17.735297210157423]

- Time interval n.1: [547.96, 548.16]

- * y_true: [17.50127175]
 - * v_ann: [20.20386505126953, 17.735297210157423]

- * err= 0.22425781921482937

* Learning rate NN = 3.6449993785936385e-05
 * diff = 2.2807810005024035e-06



For scene 47/69

* use LR_NN=5e-05 with err=4.6280440506335685 at it=24
 * v0_scn_mean = 18.225885321657216
 * MAE = 0.20661806185906909

df n.2, scene n.48/69

We have 6 time intervals inside [557.96,559.16]

- Time interval n.0: [557.96, 558.16]
 - * y_true: [21.95035828]
 - * v_ann: [24.282657623291016, 18.265989604983837]

- Time interval n.1: [558.16, 558.36]

- * y_true: [31.40071757]
 - * v_ann: [23.17608070373535, 18.265989604983837]

- Time interval n.2: [558.36, 558.56]

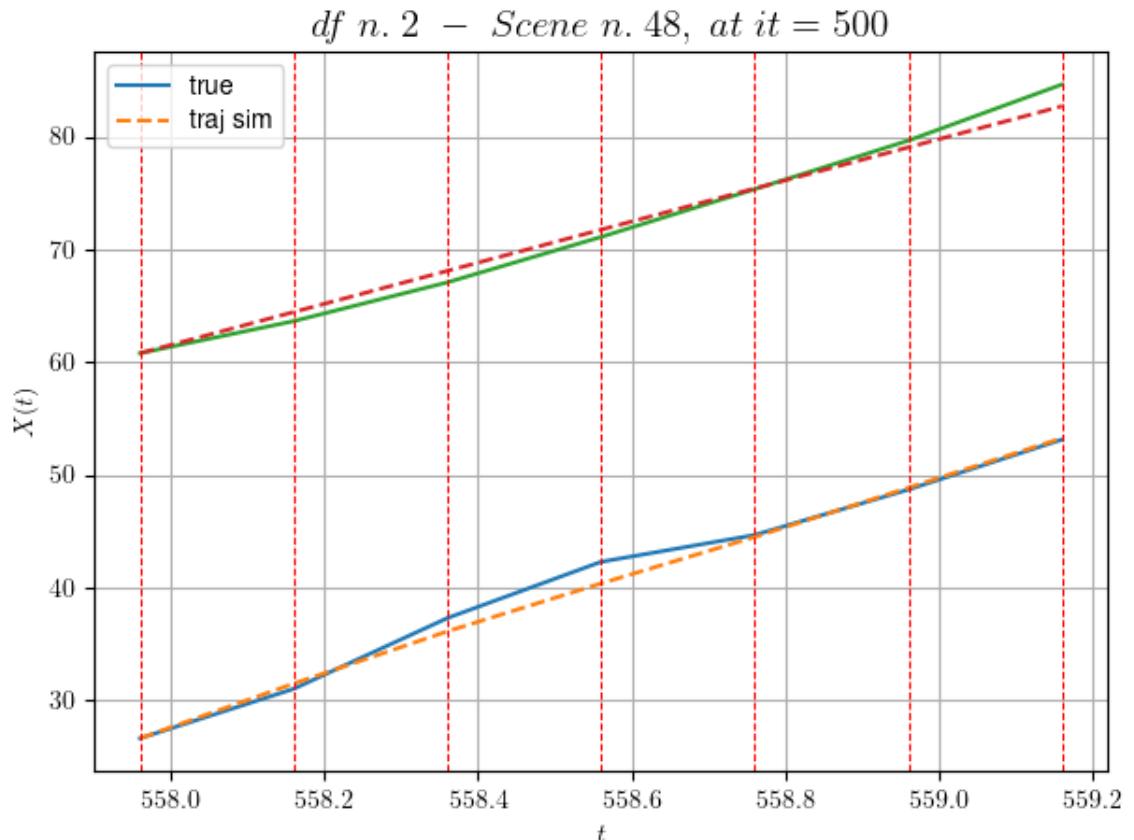
- * y_true: [24.95077032]
 - * v_ann: [21.256879806518555, 18.265989604983837]

- Time interval n.3: [558.56, 558.76]
 * y_true: [11.90043764]
 * v_ann: [20.607463836669922, 18.265989604983837]

- Time interval n.4: [558.76, 558.96]
 * y_true: [20.15085338]
 * v_ann: [21.848648071289062, 18.265989604983837]

- Time interval n.5: [558.96, 559.16]
 * y_true: [22.20111676]
 * v_ann: [22.03523826599121, 18.265989604983837]

* err= 0.8254923193712366
 * Learning rate NN = 3.138104830213706e-06
 * diff = 0.00016890056014997675

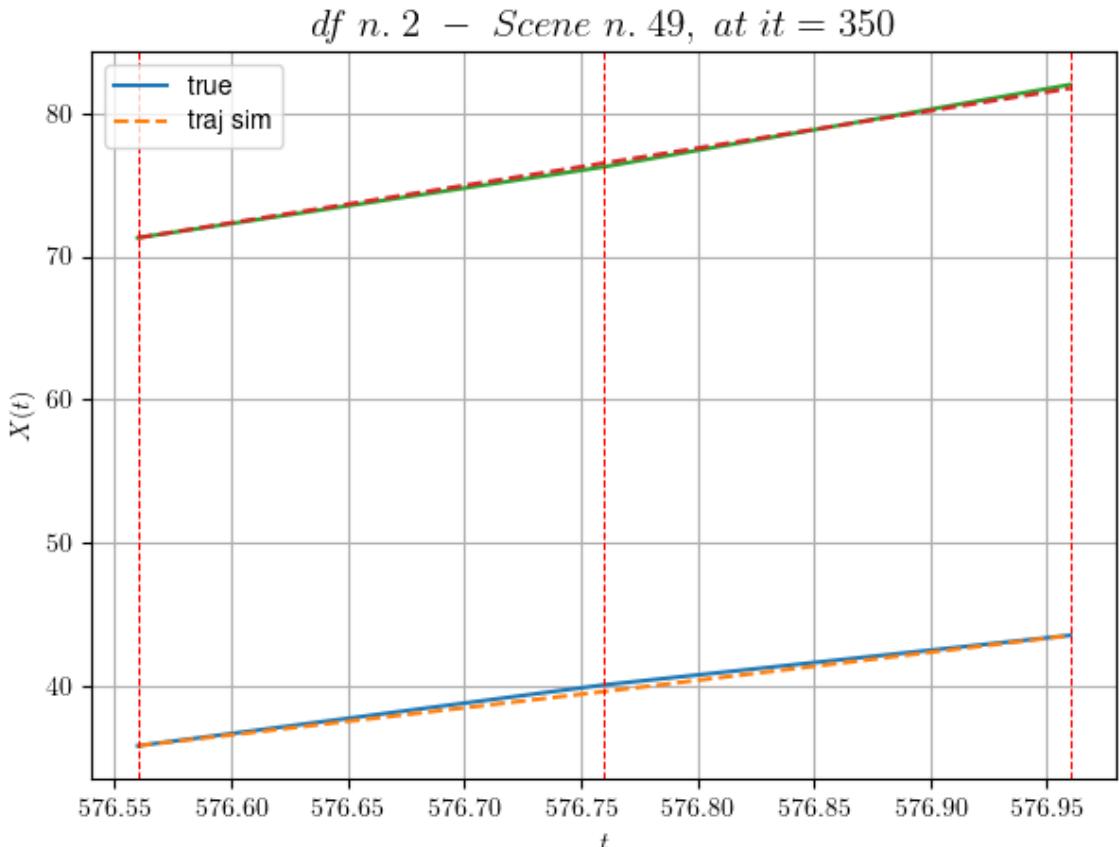


For scene 48/69
 * use LR_NN=1e-05 with err=33.431948855665425 at it=24
 * v0_scn_mean = 18.735350020694714
 * MAE = 0.7606660686808926

df n.2, scene n.49/69

We have 2 time intervals inside [576.56,576.96]

```
* err= 0.058986674544706214
* Learning rate NN = 4.049999552080408e-05
* diff = 1.6524258325545382e-07
```



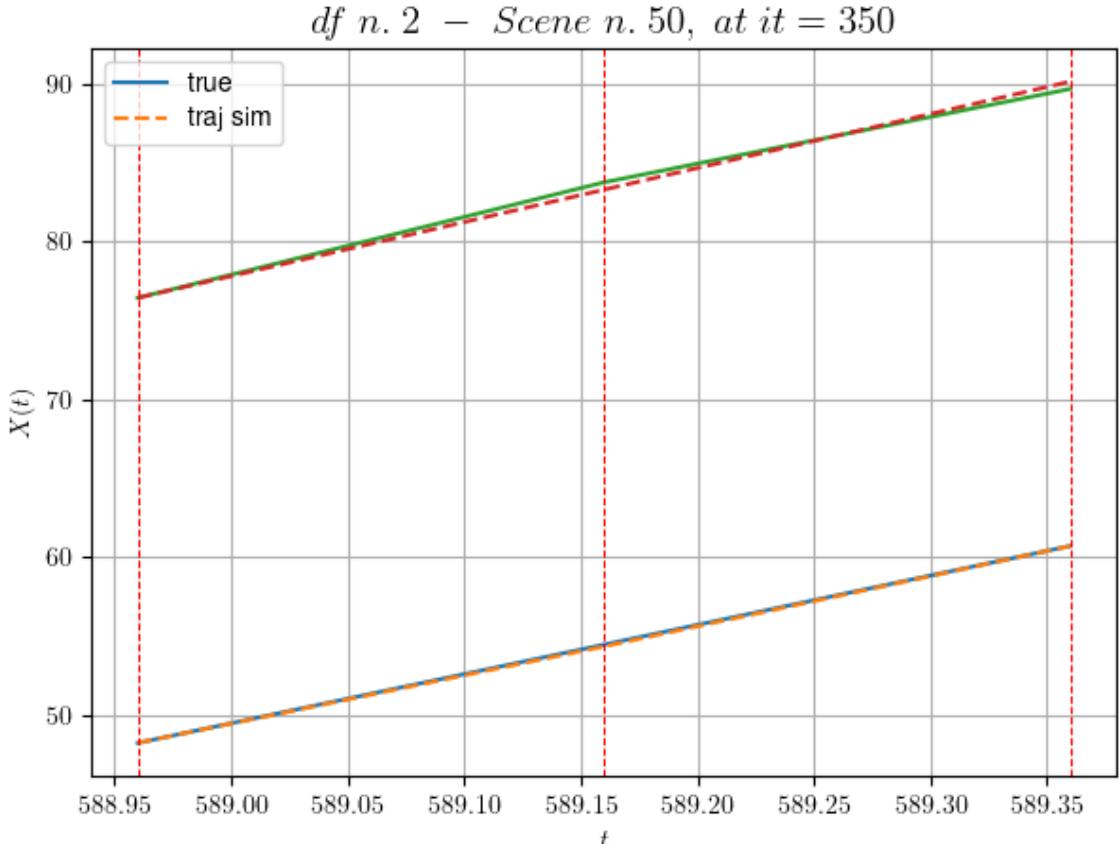
For scene 49/69

```
* use LR_NN=5e-05 with err=0.5088313130855753 at it=24
* v0_scn_mean = 26.294165143213124
* MAE = 0.05775657690706901
```

df n.2, scene n.50/69

We have 2 time intervals inside [588.96,589.36]

```
* err= 0.07480491255215131
* Learning rate NN = 4.049999552080408e-05
* diff = 1.042496229619605e-08
```



For scene 50/69

- * use LR_NN=5e-05 with err=0.5376794521911247 at it=24
- * v0_scn_mean = 33.979903425907885
- * MAE = 0.06762937921271875

df n.2, scene n.51/69

We have 4 time intervals inside [86.16, 86.96]

- Time interval n.0: [86.16, 86.36]
 - * y_true: [16.74023073 23.1409288]
 - * v_ann: [18.60826301574707, 18.60796546936035, 16.235330060145664]

- Time interval n.1: [86.36, 86.56]
 - * y_true: [19.40034801 15.51071286]
 - * v_ann: [19.98973846435547, 17.81788444519043, 16.235330060145664]

- Time interval n.2: [86.56, 86.76]
 - * y_true: [19.59044325 21.61118084]
 - * v_ann: [19.10089111328125, 17.1180419921875, 16.235330060145664]

```

-----  

- Time interval n.3: [86.76, 86.96]  

* y_true: [16.37044892 15.10091945]  

* v_ann: [19.668460845947266, 15.971237182617188, 1  

6.235330060145664]
-----
```

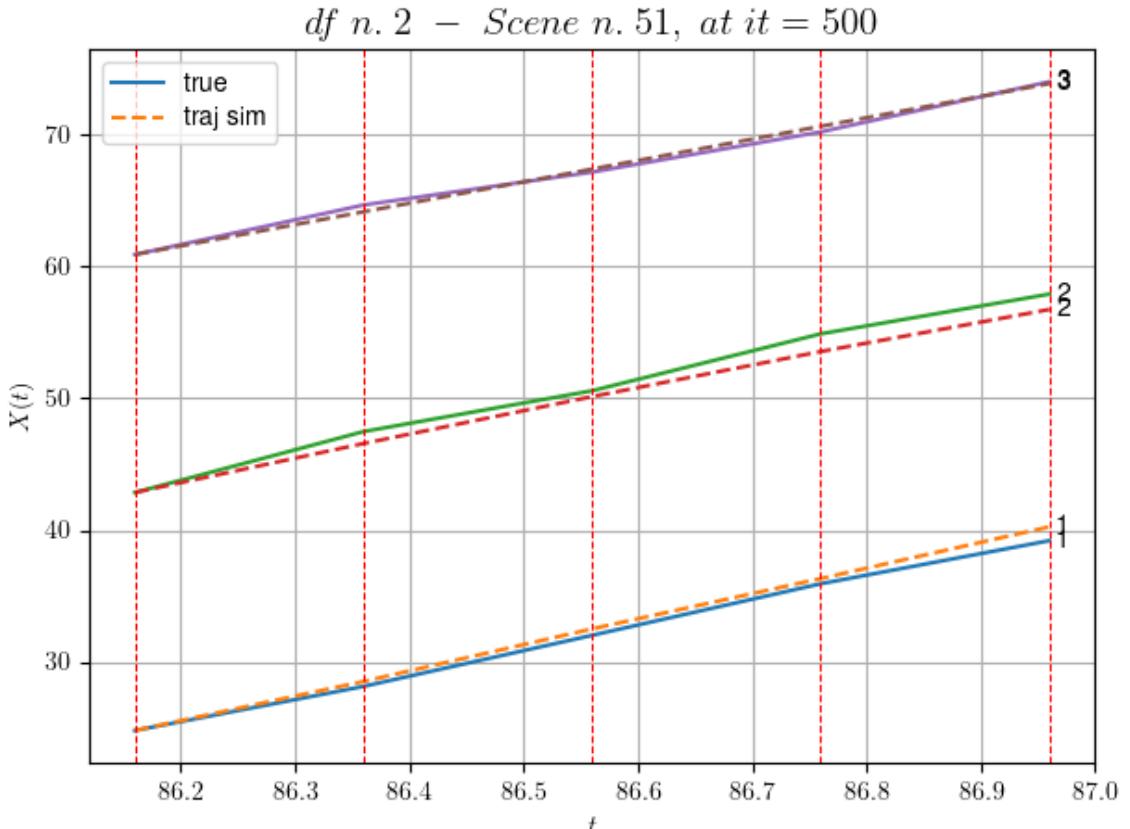
```

-----  

* err= 0.4240447824773535  

* Learning rate NN = 4.7829678806010634e-05  

* diff = 1.135207411140371e-05
-----
```



For scene 51/69

```

* use LR_NN=0.0001 with err=15.841978075308432 at it=24
* v0_scn_mean = 17.06120963853318
* MAE = 0.42386021930654666
=====
```

df n.2, scene n.52/69

```

=====
We have 4 time intervals inside [109.36,110.16]
- Time interval n.0: [109.36, 109.56]
* y_true: [28.77160952 15.03115545]
* v_ann: [22.545820236206055, 22.721630096435547, 2
0.033858704331507]
=====
```

```

-----
- Time interval n.1: [109.56, 109.76]
* y_true: [23.64157457 15.83133823]
=====
```

```

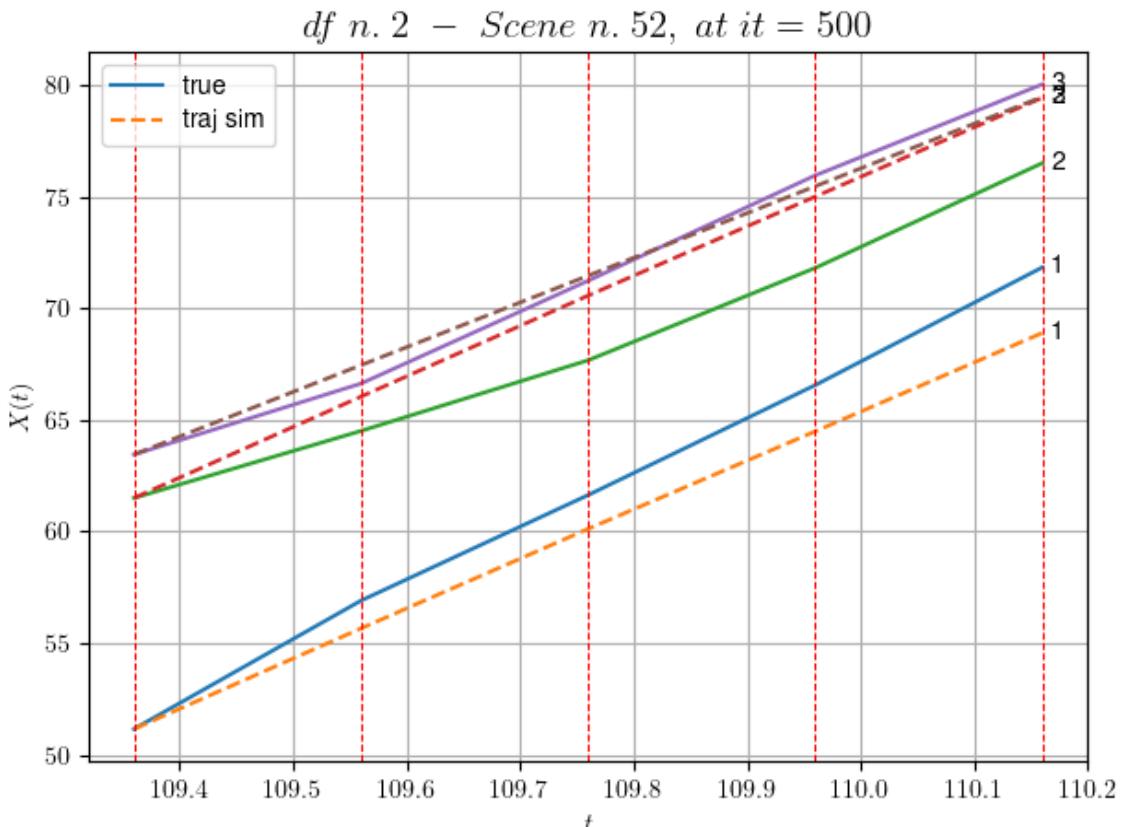
* v_ann: [22.29781150817871, 22.634862899780273, 2
0.033858704331507]

-----
- Time interval n.2: [109.76, 109.96]
* y_true: [24.63196009 20.68195399]
* v_ann: [21.845115661621094, 22.16333770751953, 2
0.033858704331507]

-----
- Time interval n.3: [109.96, 110.16]
* y_true: [26.38241903 23.49250056]
* v_ann: [22.05188751220703, 22.174339294433594, 2
0.033858704331507]

-----
* err= 3.17435319938823
* Learning rate NN = 0.000239148415857926
* diff = 0 010418167365465525

```



For scene 52/69

```

* use LR_NN=0.0005 with err=9.778103679841685 at it=24
* v0_scn_mean = 20.631826734613465
* MAE = 3.17435319938823
=====
```

df n.2, scene n.53/69

We have 4 time intervals inside [170.36, 171.16]

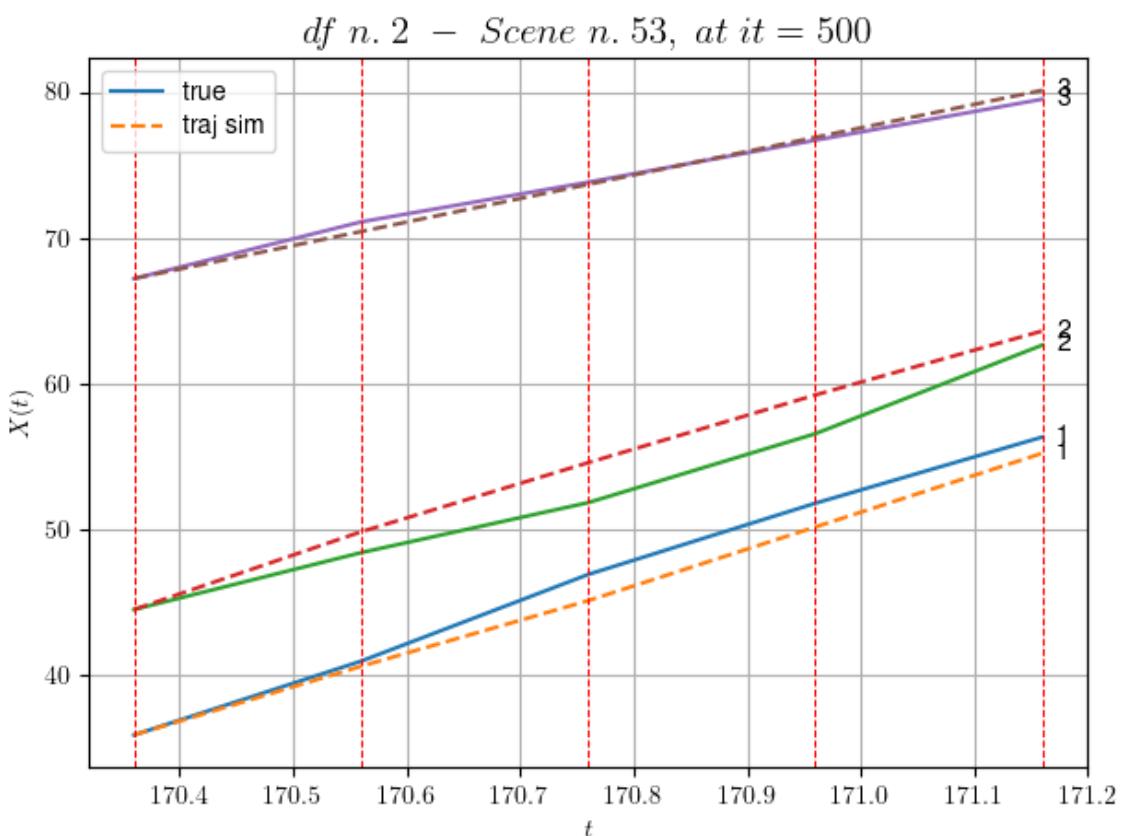
- Time interval n.0: [170.36, 170.56]
 - * y_true: [25.3307413 19.52081588]
 - * v_ann: [23.57783317565918, 26.674875259399414, 1
6.151609391477926]
-

- Time interval n.1: [170.56, 170.76]
 - * y_true: [29.74113537 17.1608437]
 - * v_ann: [22.506736755371094, 23.70560646057129, 1
6.151609391477926]
-

- Time interval n.2: [170.76, 170.96]
 - * y_true: [24.43113316 23.6413756]
 - * v_ann: [25.267475128173828, 23.22456932067871, 1
6.151609391477926]
-

- Time interval n.3: [170.96, 171.16]
 - * y_true: [22.71130298 30.41206279]
 - * v_ann: [25.322099685668945, 21.975685119628906, 1
6.151609391477926]
-

- * err= 1.7107712984127927
- * Learning rate NN = 0.000478296831715852
- * diff = 0.011903406986859988



For scene 53/69

```
* use LR_NN=0.001 with err=40.07606287428488 at it=24
* v0_scn_mean = 16.98251220622642
* MAE = 1.6958781193031403
```

```
=====
=====
```

```
df n.2, scene n.54/69
```

```
=====
=====
```

```
We have 4 time intervals inside [179.36,180.16]
```

```
- Time interval n.0: [179.36, 179.56]
  * y_true: [10.36002857 23.43048282]
  * v_ann: [17.246044158935547, 17.98835563659668, 2
2.081999529878807]
```

```
-----
-----
```

```
- Time interval n.1: [179.56, 179.76]
  * y_true: [10.37004005 22.87060641]
  * v_ann: [16.993833541870117, 17.554065704345703, 2
2.081999529878807]
```

```
-----
-----
```

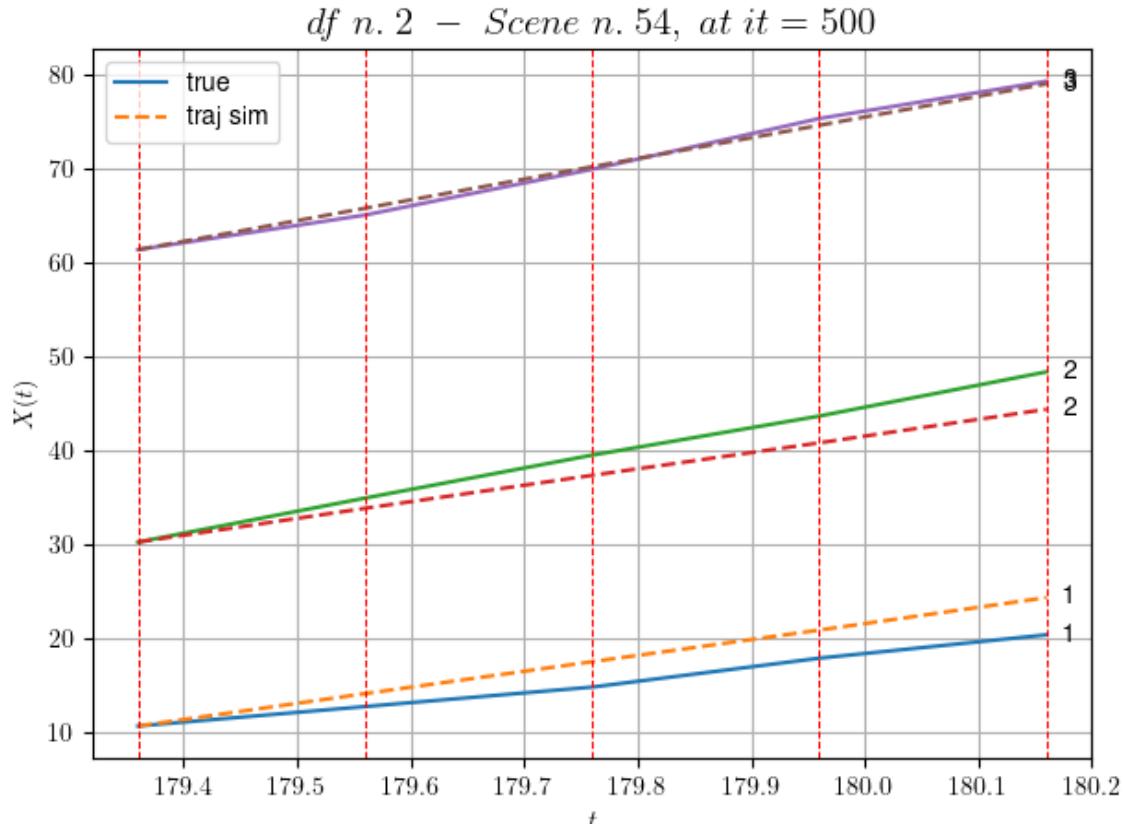
```
- Time interval n.2: [179.76, 179.96]
  * y_true: [15.39008451 20.81068862]
  * v_ann: [16.84543228149414, 17.304441452026367, 2
2.081999529878807]
```

```
-----
-----
```

```
- Time interval n.3: [179.96, 180.16]
  * y_true: [12.44008929 23.53096892]
  * v_ann: [17.31149673461914, 17.88098907470703, 22.
081999529878807]
```

```
-----
-----
```

```
* err= 4.3274837741378365
* Learning rate NN = 4.7829678806010634e-05
* diff = 0.007565501801420160
```



For scene 54/69

- * use LR_NN=0.0001 with err=5.856551681159208 at it=24
- * v0_scn_mean = 22.557079202585154
- * MAE = 3.9289710502021897

df n.2, scene n.55/69

We have 2 time intervals inside [199.76,200.16]

- Time interval n.0: [199.76, 199.96]
 - * y_true: [18.79121443 18.55195156]
 - * v_ann: [19.742319107055664, 18.671707153320312, 1

4.651669964039868]

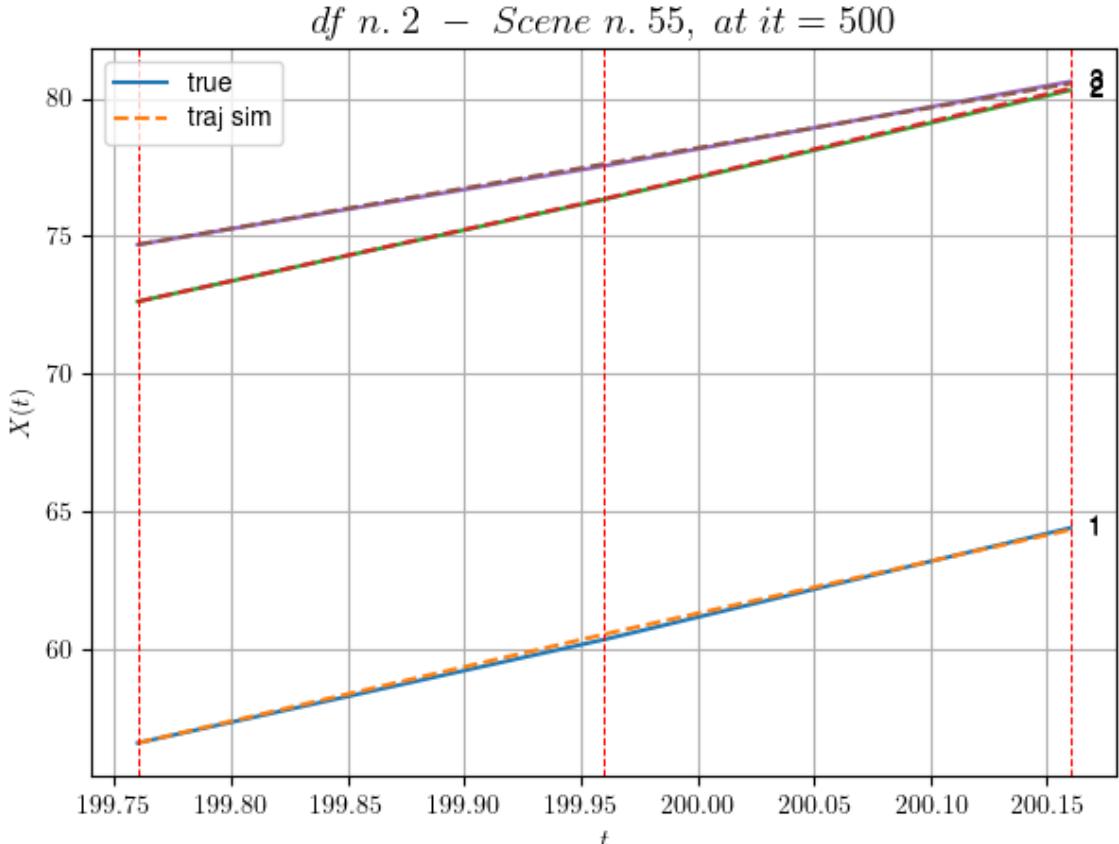
- Time interval n.1: [199.96, 200.16]
 - * y_true: [20.30155709 19.85230976]
 - * v_ann: [18.996356964111328, 20.057315826416016, 1

4.651669964039868]

- * err= 0.006199610737558678

- * Learning rate NN = 0.0007289999630302191

- * diff = 2.222665836449679e-05



For scene 55/69

- * use LR_NN=0.001 with err=10.559938987439336 at it=24
- * v0_scn_mean = 15.572569077090648
- * MAE = 0.006115616862029219

df n.2, scene n.56/69

We have 4 time intervals inside [212.56, 213.36]

- Time interval n.0: [212.56, 212.76]
 - * y_true: [14.43013055 12.85042103]
 - * v_ann: [15.144294738769531, 17.29318618774414, 2 0.50713532091637]

- Time interval n.1: [212.76, 212.96]
 - * y_true: [10.79011916 33.80137312]
 - * v_ann: [14.662382125854492, 17.440994262695312, 2 0.50713532091637]

- Time interval n.2: [212.96, 213.16]
 - * y_true: [16.24022861 13.70067627]
 - * v_ann: [16.846960067749023, 17.8514347076416, 20.

50713532091637]

```

-----  

- Time interval n.3: [213.16, 213.36]  

* y_true: [10.73017559 21.10118973]  

* v_ ann: [16.246864318847656, 17.106233596801758, 2  

0.50713532091637]
-----
```

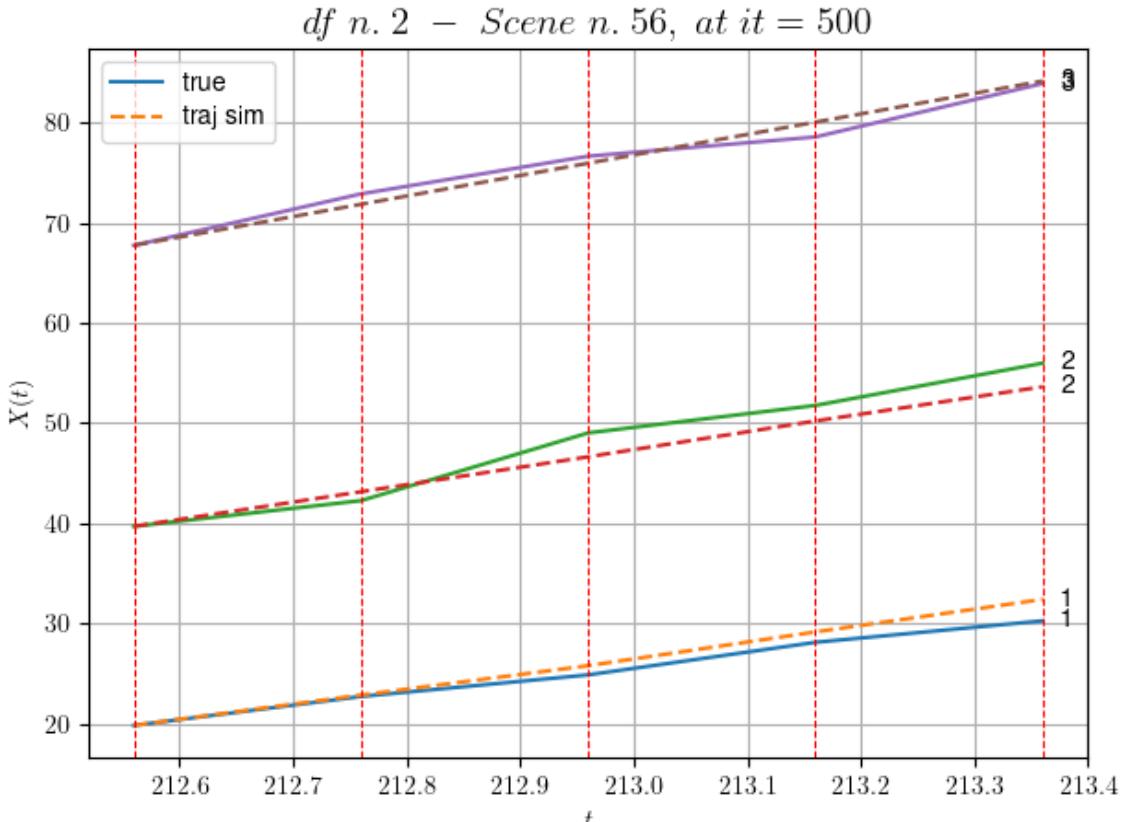
```

-----  

* err= 1.6518034051577952  

* Learning rate NN = 4.7829678806010634e-05  

* diff = 0.007445766660877373
-----
```



For scene 56/69

```

* use LR_NN=0.0001 with err=8.830084962305127 at it=24  

* v0_scn_mean = 21.076706775452383  

* MAE = 1.4489658076625647
=====
```

df n.2, scene n.57/69

```

=====  

=====  

We have 3 time intervals inside [318.16,318.76]
-----
```

```

- Time interval n.0: [318.16, 318.36]  

* y_true: [13.01007537 20.36054455]  

* v_ ann: [15.690326690673828, 17.55270004272461, 2  

0.355197629164152]
-----
```

```

-----  

- Time interval n.1: [318.36, 318.56]  

* y_true: [14.27010639 20.89068863]
-----
```

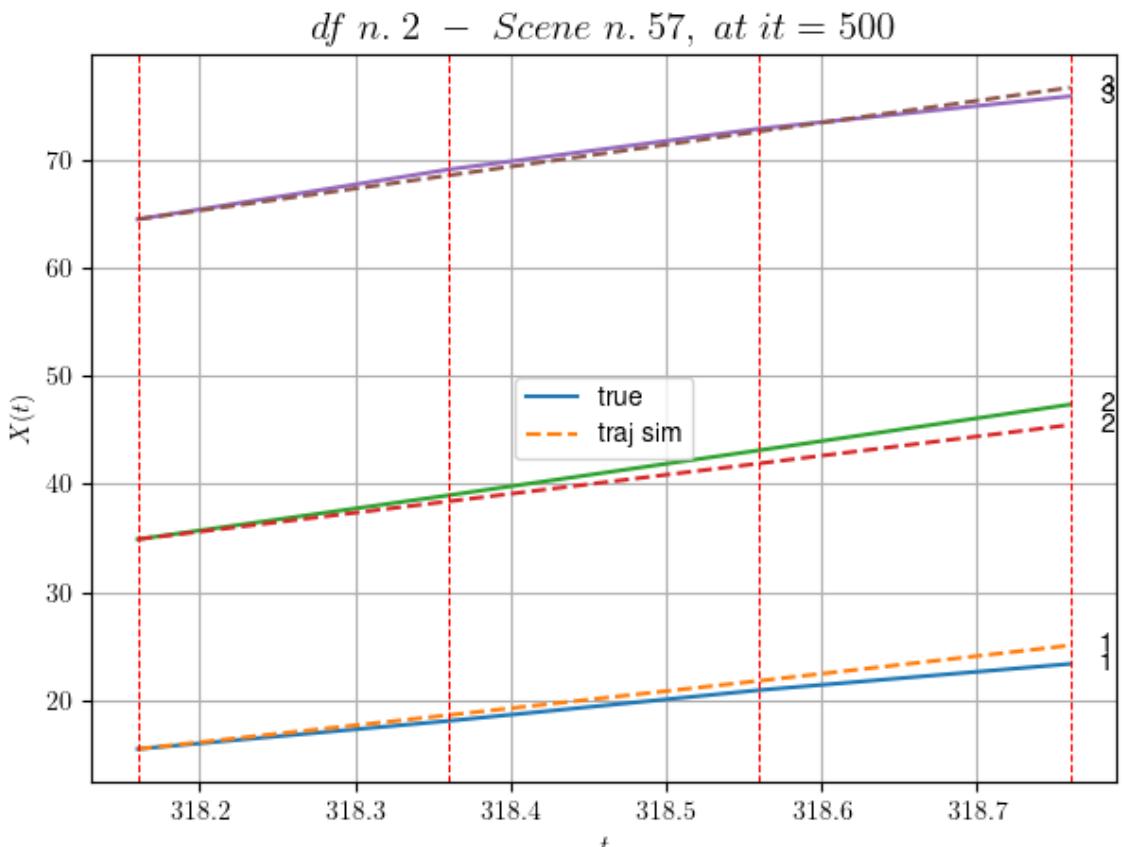
```

* v_ann: [15.917928695678711, 17.594696044921875, 2
0.355197629164152]

-----
- Time interval n.2: [318.56, 318.76]
* y_true: [12.16011799 21.20084683]
* v_ann: [16.400962829589844, 17.847471237182617, 2
0.355197629164152]

-----
* err= 0.863974305530543
* Learning rate NN = 5.904899080633186e-05
* diff = 0.00001714651222719

```



For scene 57/69

```

* use LR_NN=0.0001 with err=4.963322739123034 at it=24
* v0_scn_mean = 20.93388533838323
* MAE = 0.7956101166877122
=====
```

df n.2, scene n.58/69

```
=====
```

We have 4 time intervals inside [430.16, 430.96]

```

- Time interval n.0: [430.16, 430.36]
* y_true: [15.83005748 20.27065425]
* v_ann: [18.745986938476562, 18.519559860229492, 2
1.23690274072125]
```

```

-----  

-----  

    - Time interval n.1: [430.36, 430.56]  

      * y_true: [19.99011659 24.33092793]  

      * v_ann: [18.921249389648438, 18.841392517089844, 2  

1.23690274072125]  

-----  

-----  

    - Time interval n.2: [430.56, 430.76]  

      * y_true: [14.67011767 20.05093433]  

      * v_ann: [19.634183883666992, 18.795154571533203, 2  

1.23690274072125]  

-----  

-----  

    - Time interval n.3: [430.76, 430.96]  

      * y_true: [14.38015429 21.97121967]  

      * v_ann: [19.683042526245117, 18.265146255493164, 2  

1.23690274072125]  

-----  

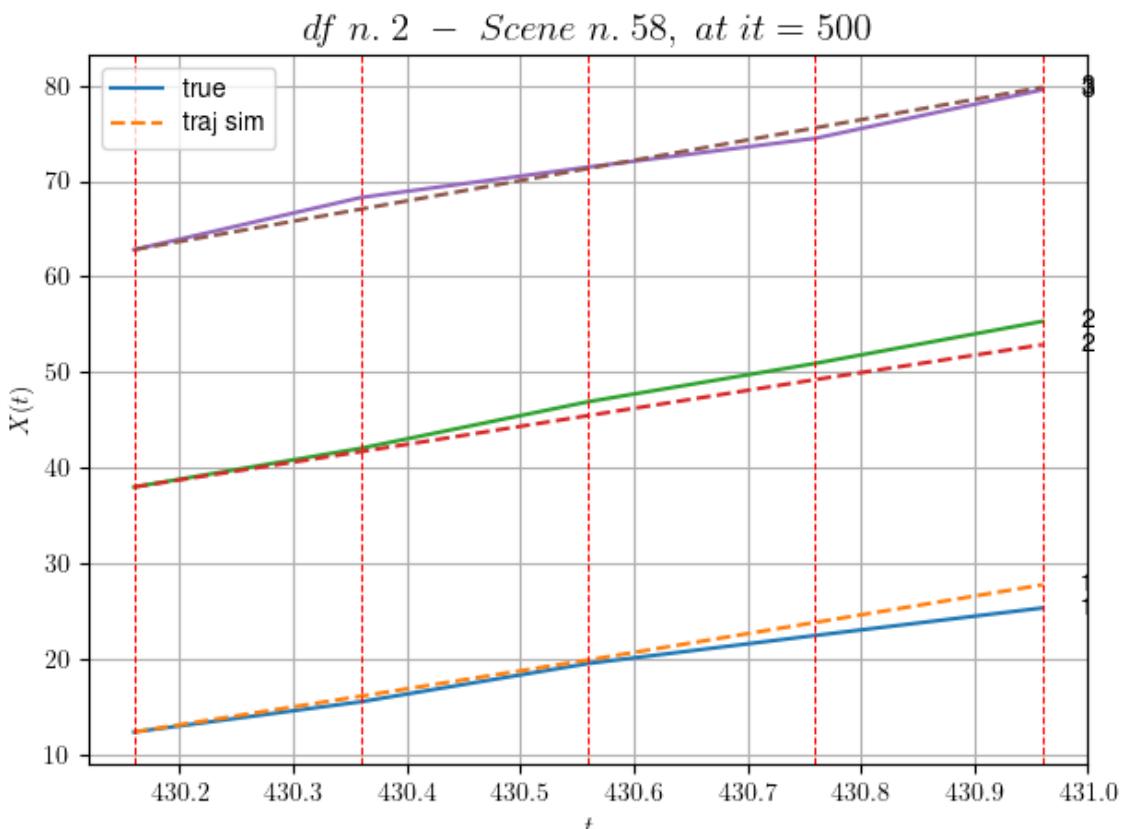
-----  

* err= 1.4687031913392141  

* Learning rate NN = 2.3914839403005317e-05  

* diff = 0 001798377451630806

```



For scene 58/69
* use LR_NN=5e-05 with err=8.669334014049696 at it=24
* v0_scn_mean = 21.762688182834165
* MAE = 1.4621091357626887

```
df n.2, scene n.59/69
```

We have 2 time intervals inside [435.96, 436.36]

- Time interval n.0: [435.96, 436.16]
 - * y_true: [15.85107698 23.95169404]
 - * v_ann: [21.949037551879883, 24.427322387695312, 2
 - 1.45871549250858]

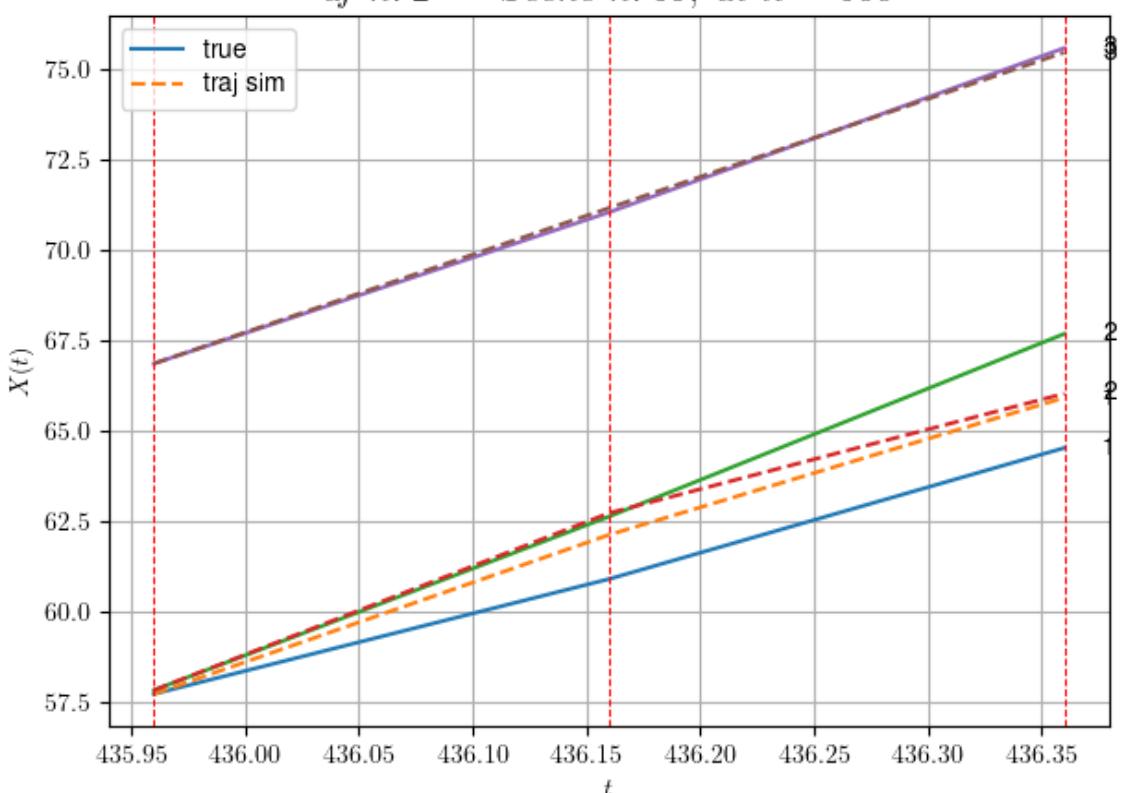
-
- Time interval n.1: [436.16, 436.36]
 - * y_true: [18.0813972 25.19206379]
 - * v_ann: [18.91126823425293, 16.47895050048828, 21.

* err= 0.6843320929754854

* Learning rate NN = 0.0036449995823204517

* diff = 1.4163005800371664e-05

df n. 2 – Scene n. 59, at it = 500



For scene 59/69

- * use LR_NN=0.005 with err=2.4682539844393077 at it=24
- * v0_scn_mean = 21.971192179472958
- * MAE = 0.6843048690952004

```
df n.2, scene n.60/69
```

```
=====
We have 5 time intervals inside [442.76,443.76]
- Time interval n.0: [442.76, 442.96]
  * y_true: [18.06141662 13.31057742]
  * v_ann: [21.132890701293945, 16.685043334960938, 2
2.775896802504707]

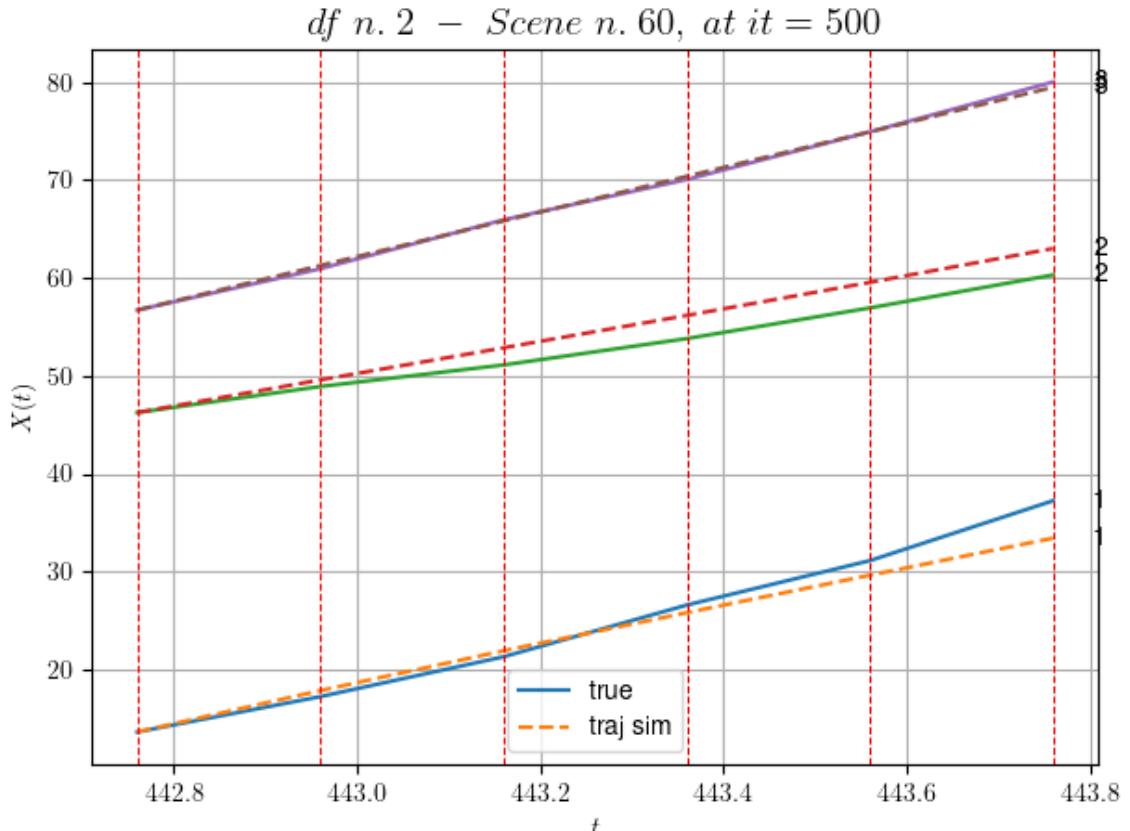
-----
- Time interval n.1: [442.96, 443.16]
  * y_true: [20.34015276 11.01053508]
  * v_ann: [20.33241081237793, 16.399826049804688, 2
2.775896802504707]

-----
- Time interval n.2: [443.16, 443.36]
  * y_true: [26.42894929 13.47072378]
  * v_ann: [19.48129653930664, 16.536439895629883, 2
2.775896802504707]

-----
- Time interval n.3: [443.36, 443.56]
  * y_true: [22.70036274 15.67093348]
  * v_ann: [19.135467529296875, 16.895822525024414, 2
2.775896802504707]

-----
- Time interval n.4: [443.56, 443.76]
  * y_true: [30.60068675 16.84112333]
  * v_ann: [18.944015502929688, 17.31011199951172, 2
2.775896802504707]

-----
* err= 2.3303937644979498
* Learning rate NN = 1.9371018424862996e-05
* diff = 0.001601005022200
```



For scene 60/69

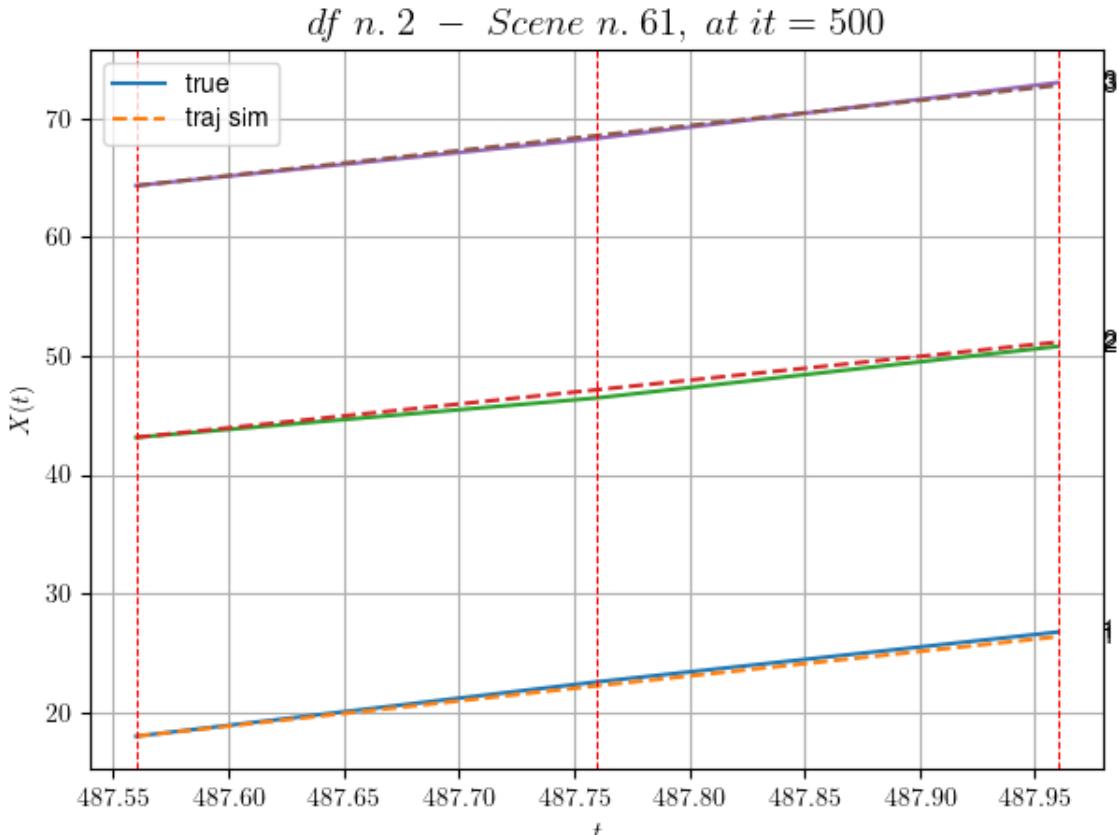
```
* use LR_NN=5e-05 with err=7.967818271722083 at it=24
* v0_scn_mean = 23.20934267000819
* MAE = 1.1473291521908149
```

df n.2, scene n.61/69

```
We have 2 time intervals inside [487.56,487.96]
- Time interval n.0: [487.56, 487.76]
  * y_true: [22.90018755 16.61065196]
  * v_ann: [21.255352020263672, 20.063344955444336, 2
  1.11190024799179]
```

```
- Time interval n.1: [487.76, 487.96]
  * y_true: [21.00025249 21.71102285]
  * v_ann: [20.67502784729004, 20.07521629333496, 21.
  11190024799179]
```

```
* err= 0.10994643093830218
* Learning rate NN = 3.6449993785936385e-05
* diff = 7.528410766648175e-05
```



For scene 61/69

```
* use LR_NN=5e-05 with err=1.698046705176895 at it=24
* v0_scn_mean = 21.645185834056107
* MAE = 0.10844611592692577
```

df n.2, scene n.62/69

We have 5 time intervals inside [531.76, 532.76]

- Time interval n.0: [531.76, 531.96]
 - * y_true: [23.26110286 19.80102444]
 - * v_ann: [20.670997619628906, 22.45821762084961, 1

7.91173132807971]

- Time interval n.1: [531.96, 532.16]
 - * y_true: [19.37730225 14.13461647]
 - * v_ann: [20.884559631347656, 20.31548309326172, 1

7.91173132807971]

- Time interval n.2: [532.16, 532.36]
 - * y_true: [16.15104075 20.18132342]
 - * v_ann: [20.988197326660156, 20.973045349121094, 1

7.91173132807971]

```

-----  

    - Time interval n.3: [532.36, 532.56]  

      * y_true: [21.60157988 27.91216632]  

      * v_ann: [20.4000301361084, 20.571727752685547, 17.  

91173132807971]

```

```

-----  

    - Time interval n.4: [532.56, 532.76]  

      * y_true: [19.65163525 25.90233391]  

      * v_ann: [20.269845962524414, 20.351335525512695, 1  

7.91173132807971]

```

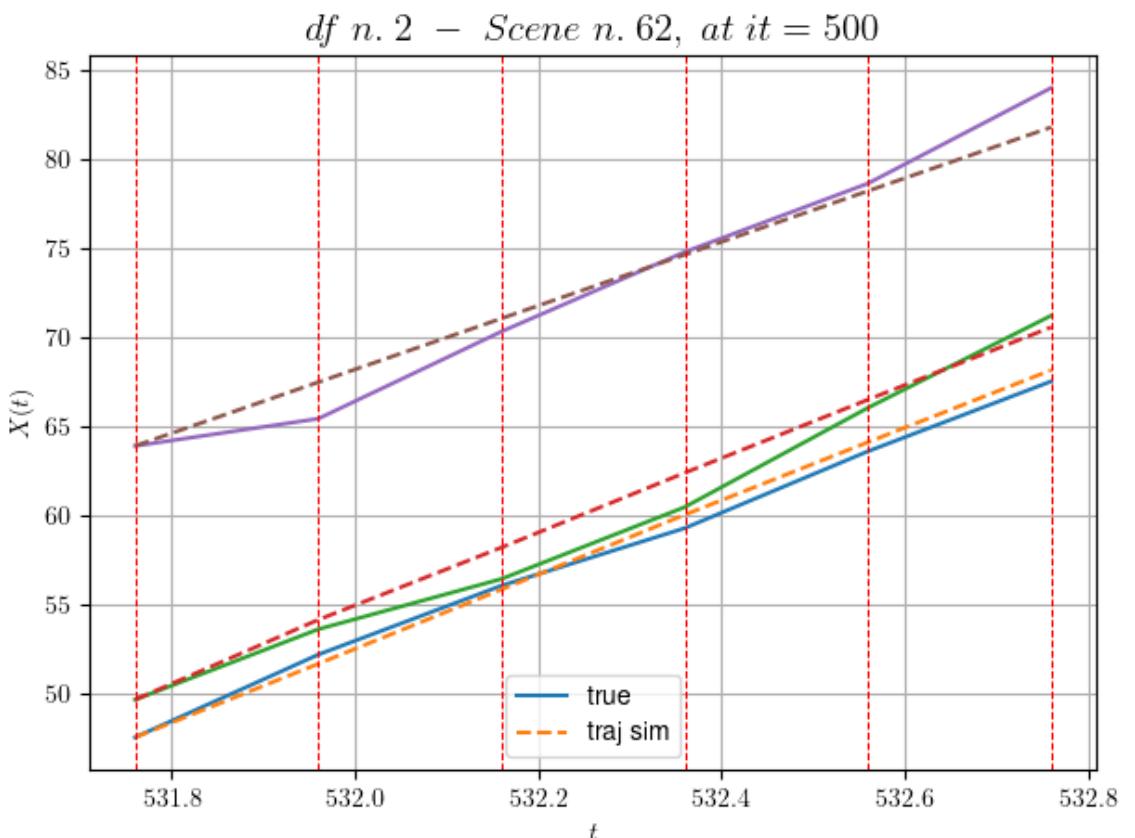
```

* err= 1.062856618353396  

* Learning rate NN = 0.0003874204121530056  

* diff = 0.010996039050326312

```



For scene 62/69

```

* use LR_NN=0.001 with err=27.11699507797751 at it=24
* v0_scn_mean = 18.637026905658313
* MAE = 1.057404711855513

```

df n.2, scene n.63/69

```

We have 4 time intervals inside [538.36,539.16]
- Time interval n.0: [538.36, 538.56]
  * y_true: [17.69068154 17.20117669]

```

```

* v_ann: [21.6632080078125, 20.638338088989258, 21.
518869344524393]

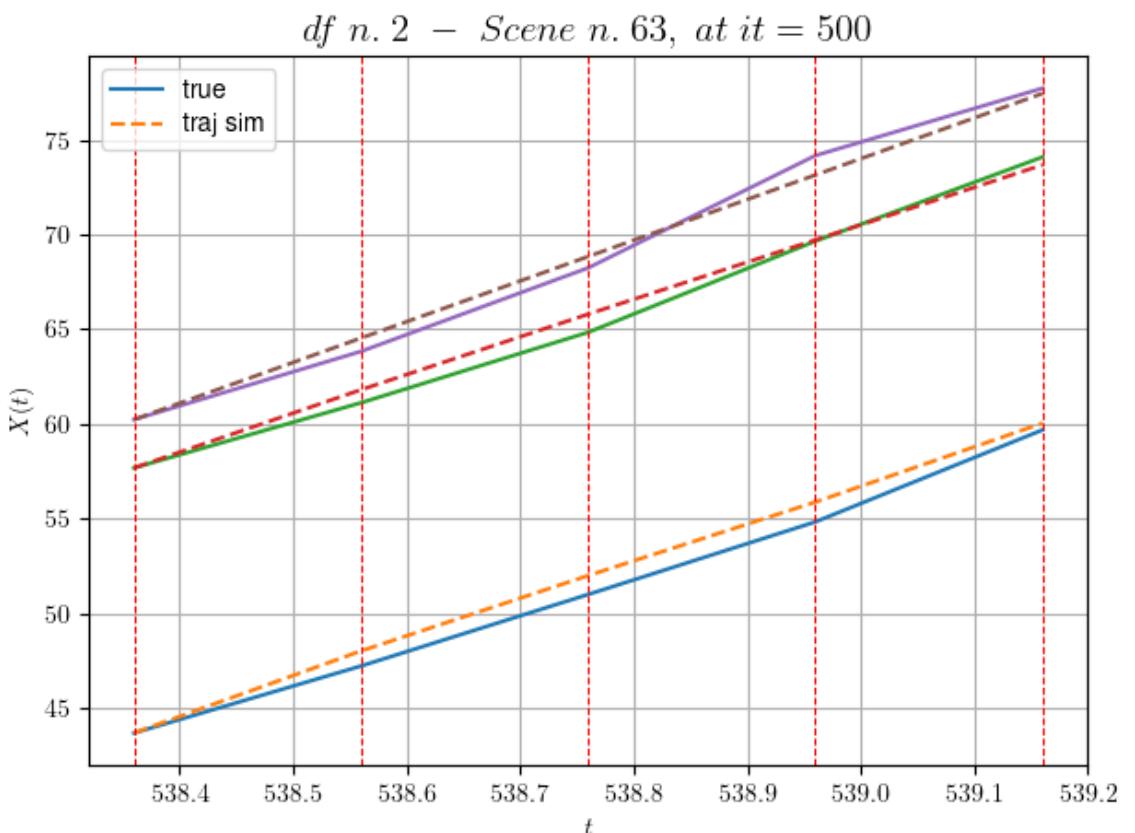
-----
- Time interval n.1: [538.56, 538.76]
* y_true: [18.89091077 18.60142936]
* v_ann: [19.892868041992188, 19.94830894470215, 2
1.518869344524393]

-----
- Time interval n.2: [538.76, 538.96]
* y_true: [19.15102468 24.05210496]
* v_ann: [19.40359878540039, 19.592594146728516, 2
1.518869344524393]

-----
- Time interval n.3: [538.96, 539.16]
* y_true: [24.26158149 22.202218 ]
* v_ann: [20.819896697998047, 19.81463623046875, 2
1.518869344524393]

-----
* err= 0.425767381835323
* Learning rate NN = 0.000478296831715852
* diff = 0.0001071122001022866

```



For scene 63/69

```

* use LR_NN=0.001 with err=19.362904622528557 at it=24
* v0_scn_mean = 22.027736803068283
* MAE = 0.42113358834436915

```

```
=====
=====

df n.2, scene n.64/69
=====

=====
We have 6 time intervals inside [541.16,542.36]
- Time interval n.0: [541.16, 541.36]
  * y_true: [22.67086863 28.23390149]
  * v_ann: [26.037748336791992, 26.277719497680664, 2
0.489990975467183]

-----
- Time interval n.1: [541.36, 541.56]
  * y_true: [19.45088023 23.11862329]
  * v_ann: [24.28734016418457, 24.73807144165039, 20.
489990975467183]

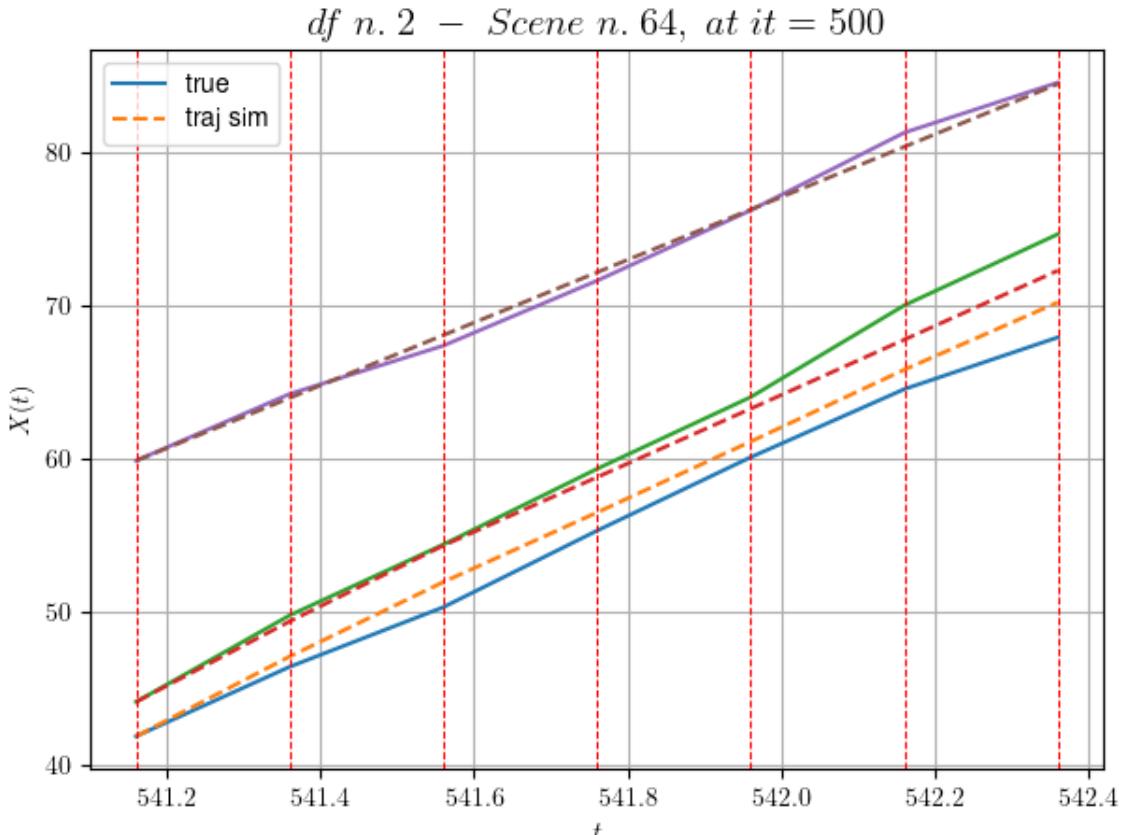
-----
- Time interval n.2: [541.56, 541.76]
  * y_true: [24.96136667 24.68114114]
  * v_ann: [22.689739227294922, 22.29345703125, 20.48
9990975467183]

-----
- Time interval n.3: [541.76, 541.96]
  * y_true: [23.96154506 23.41644837]
  * v_ann: [23.147693634033203, 22.341495513916016, 2
0.489990975467183]

-----
- Time interval n.4: [541.96, 542.16]
  * y_true: [22.22167267 29.9460798 ]
  * v_ann: [23.45615577697754, 22.55584716796875, 20.
489990975467183]

-----
- Time interval n.5: [542.16, 542.36]
  * y_true: [16.91142821 23.23526684]
  * v_ann: [21.982820510864258, 22.54715347290039, 2
0.489990975467183]

-----
* err= 1.2291946510727947
* Learning rate NN = 0.00031381050939671695
* diff = 0.0034471355547871507
```



For scene 64/69

- * use LR_NN=0.001 with err=29.405306989784023 at it=24
- * v0_scn_mean = 21.060591089960376
- * MAE = 1.2218353504433765

df n.2, scene n.65/69

We have 2 time intervals inside [549.76, 550.16]

- Time interval n.0: [549.76, 549.96]
 - * y_true: [23.30098965 17.25125335]
 - * v_ann: [23.4619197845459, 20.10866928100586, 22.4

9571952540943]

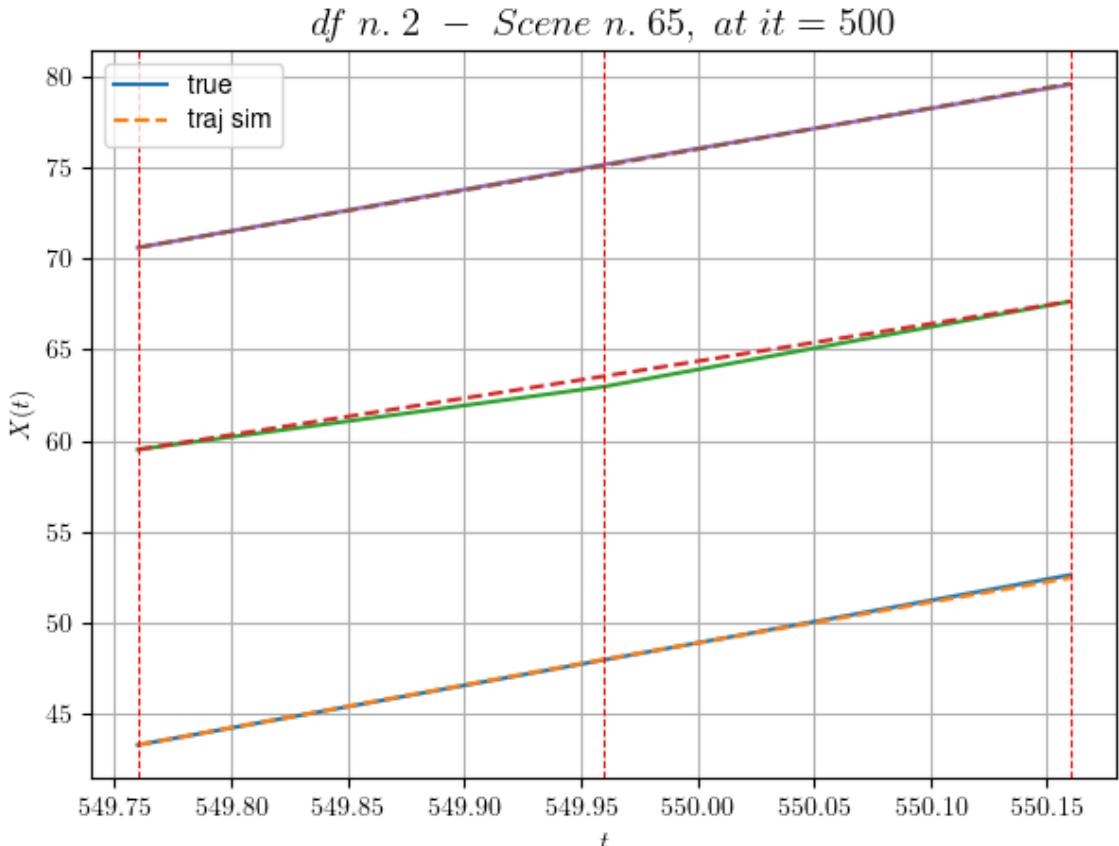
- Time interval n.1: [549.96, 550.16]
 - * y_true: [23.30098965 23.35192881]
 - * v_ann: [22.373796463012695, 20.51302146911621, 2

2.49571952540943]

- * err= 0.039744502998268025

- * Learning rate NN = 7.289998757187277e-05

- * diff = 0.002244855498812072



For scene 65/69

- * use LR_NN=0.0001 with err=1.3938287788502208 at it=24
- * v0_scn_mean = 22.945976016958628
- * MAE = 0.03130231167567726

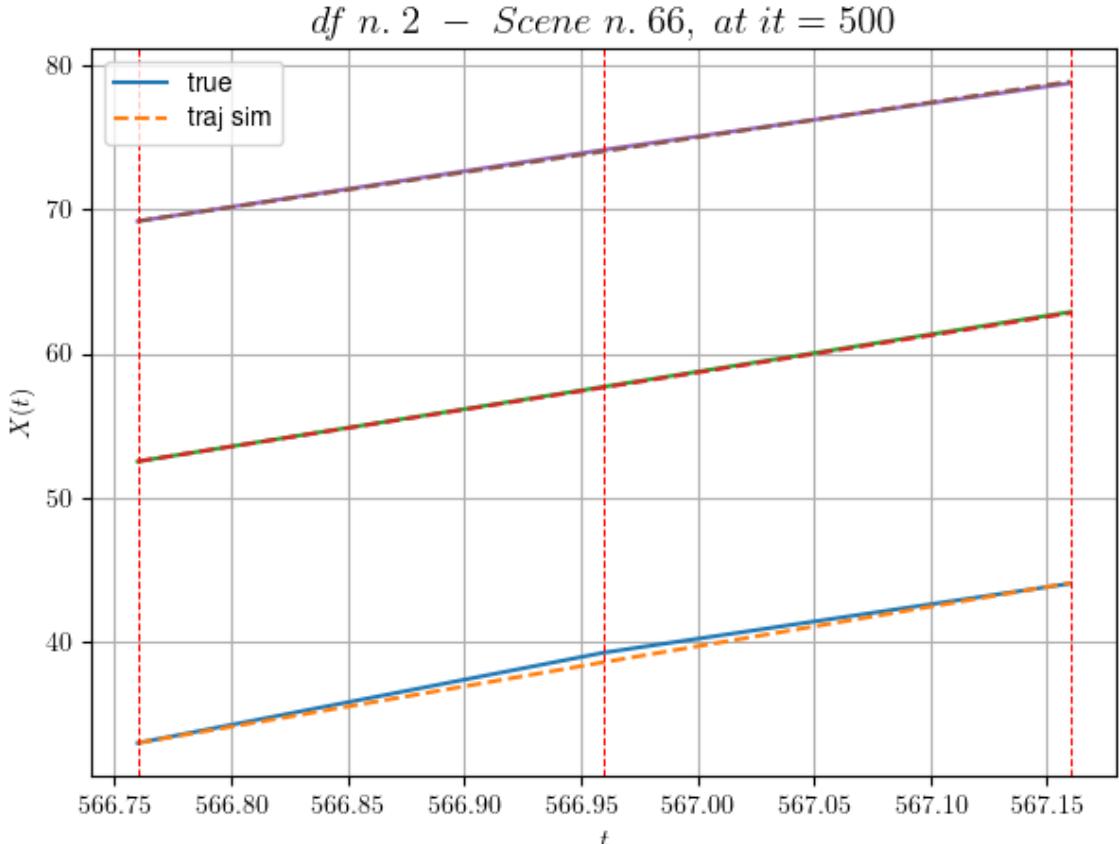
df n.2, scene n.66/69

We have 2 time intervals inside [566.76, 567.16]

- Time interval n.0: [566.76, 566.96]
 - * y_true: [31.35080123 25.9264585]
 - * v_ann: [28.037912368774414, 25.67598533630371, 2 4.22252039115249]

- Time interval n.1: [566.96, 567.16]
 - * y_true: [23.95081051 25.9264585]
 - * v_ann: [27.484094619750977, 25.79708480834961, 2 4.22252039115249]

- * err= 0.052802457981985296
- * Learning rate NN = 7.289998757187277e-05
- * diff = 2.8749872418083744e-05



For scene 66/69

* use LR_NN=0.0001 with err=0.8408209657051245 at it=24
 * v0_scn_mean = 24.569168908286795
 * MAE = 0.052138944936005543

df n.2, scene n.67/69

We have 3 time intervals inside [87.56, 88.16]

- Time interval n.0: [87.56, 87.76]
 - * y_true: [20.56019483 17.07029985 18.3510221]
 - * v_ann: [18.7926082611084, 20.255529403686523, 18.661230087280273, 23.399103331764405]

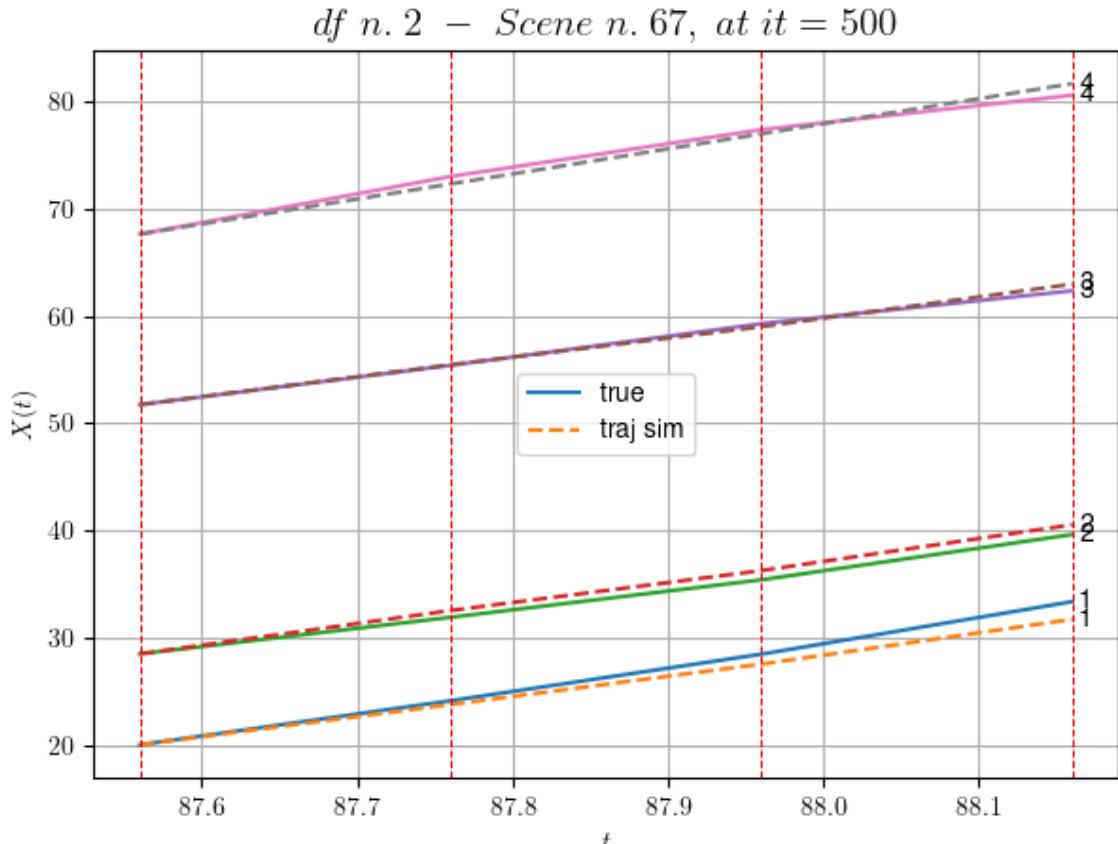
- Time interval n.1: [87.76, 87.96]
 - * y_true: [21.72029145 17.49039467 19.46124504]
 - * v_ann: [18.849651336669922, 18.625207901000977, 17.723026275634766, 23.399103331764405]

- Time interval n.2: [87.96, 88.16]
 - * y_true: [24.51045762 21.12058621 15.36109554]
 - * v_ann: [20.911697387695312, 21.387834548950195, 19.89484214782715, 23.399103331764405]

```

* err= 0.49757372962127294
* Learning rate NN = 0.0005904899444431067
* diff = 0.002784672552204215

```



For scene 67/69

```

* use LR_NN=0.001 with err=9.019476711594653 at it=24
* v0_scn_mean = 23.927153585033047
* MAE = 0.491418971655733

```

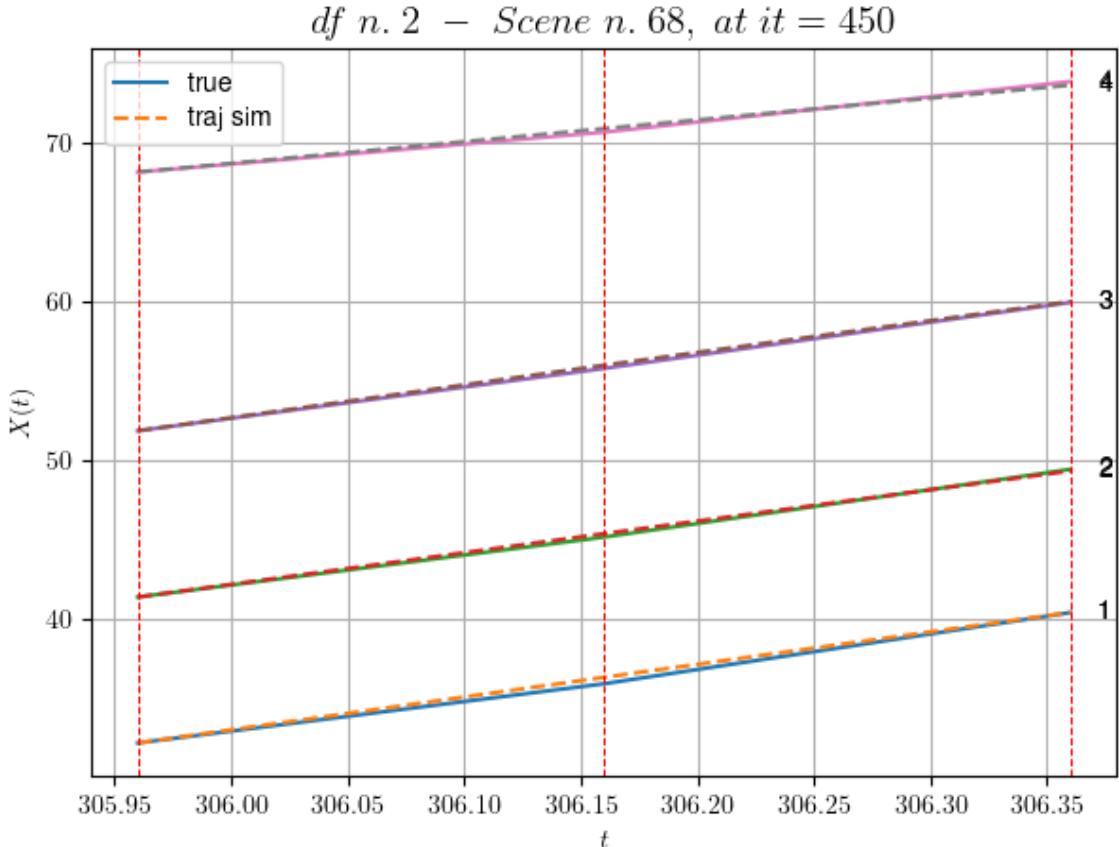
df n.2, scene n.68/69

We have 2 time intervals inside [305.96,306.36]

```

* err= 0.030634978895598568
* Learning rate NN = 7.289998757187277e-05
* diff = 6.319139045952993e-07

```



For scene 68/69

- * use LR_NN=0.0001 with err=5.349632260614365 at it=24
- * v0_scn_mean = 15.131824363379083
- * MAE = 0.030330251621060202

For df=2 with 69 scenes, time taken: 1160.43

In df n.3/10 we have 90 scenes
df n.3, scene n.0/90

We have 7 time intervals inside [9.36,10.76]
 - Time interval n.0: [9.36, 9.56]
 * y_true: [21.20002029]
 * v_ann: [25.099061965942383, 32.52950262782101]

- Time interval n.1: [9.56, 9.76]
 * y_true: [27.90008682]
 * v_ann: [25.998783111572266, 32.52950262782101]

- Time interval n.2: [9.76, 9.96]
 * y_true: [27.05016725]

```
* v_ann: [26.592317581176758, 32.52950262782101]
```

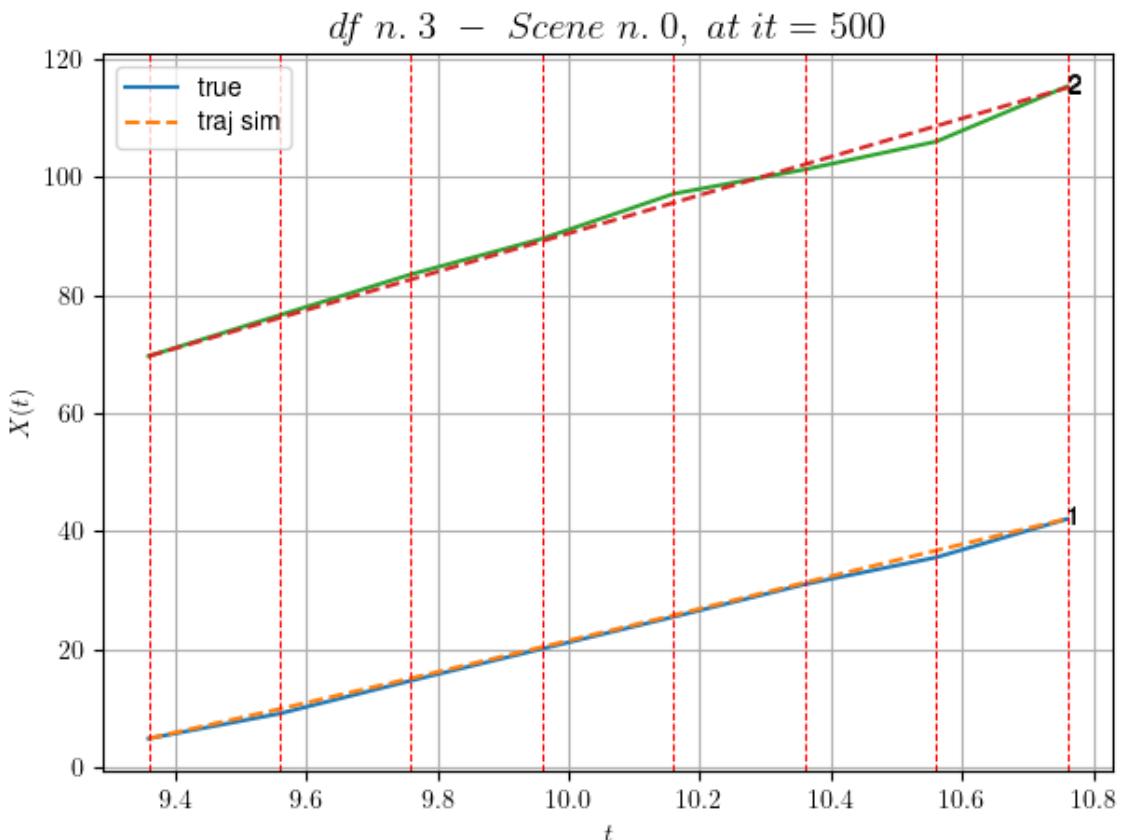
```
- Time interval n.3: [9.96, 10.16]
* y_true: [27.05027848]
* v_ann: [26.857955932617188, 32.52950262782101]
```

```
- Time interval n.4: [10.16, 10.36]
* y_true: [27.60042478]
* v_ann: [27.714868545532227, 32.52950262782101]
```

```
- Time interval n.5: [10.36, 10.56]
* y_true: [22.82551322]
* v_ann: [27.17135238647461, 32.52950262782101]
```

```
- Time interval n.6: [10.56, 10.76]
* y_true: [32.62597085]
* v_ann: [27.04269027709961, 32.52950262782101]
```

```
* err= 0.8477703041676751
* Learning rate NN = 2.541864660088322e-06
* diff = 0.0009421458009171157
```



For scene 0/90

* use LR_NN=1e-05 with err=2.58411381965205 at it=24

```
* vθ_scn_mean = 32.428322522727484
* MAE = 0.8248541045211399
```

```
=====
```

```
=====
```

```
df n.3, scene n.1/90
```

```
=====
```

```
=====
```

```
We have 6 time intervals inside [12.76,13.96]
```

```
- Time interval n.0: [12.76, 12.96]
  * y_true: [25.56253837]
  * v_ann: [30.371990203857422, 33.32970746415817]
```

```
- Time interval n.1: [12.96, 13.16]
  * y_true: [28.79893317]
  * v_ann: [29.82179069519043, 33.32970746415817]
```

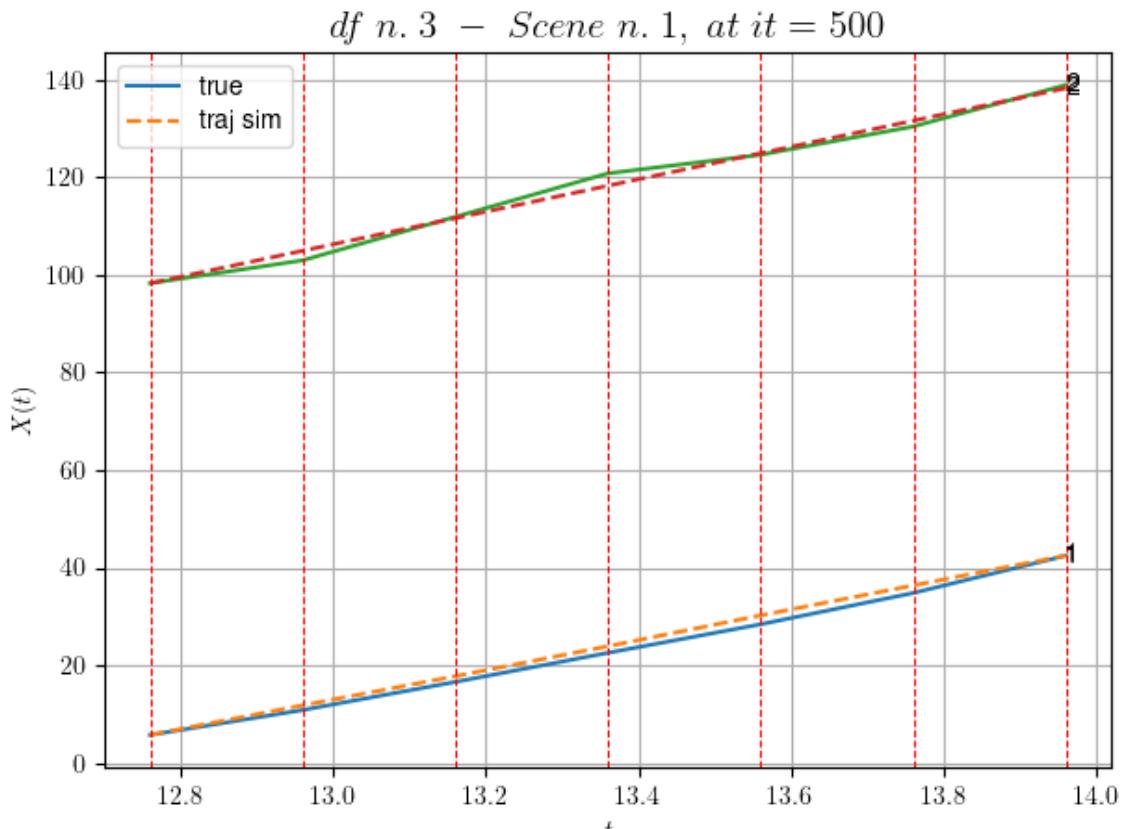
```
- Time interval n.2: [13.16, 13.36]
  * y_true: [29.813898]
  * v_ann: [30.752687454223633, 33.32970746415817]
```

```
- Time interval n.3: [13.36, 13.56]
  * y_true: [29.27421556]
  * v_ann: [31.612428665161133, 33.32970746415817]
```

```
- Time interval n.4: [13.56, 13.76]
  * y_true: [32.06311816]
  * v_ann: [30.734304428100586, 33.32970746415817]
```

```
- Time interval n.5: [13.76, 13.96]
  * y_true: [38.31363463]
  * v_ann: [30.658044815063477, 33.32970746415817]
```

```
* err= 1.5844511841846307
* Learning rate NN = 3.138104830213706e-06
* diff = 0.01042752892171439
```

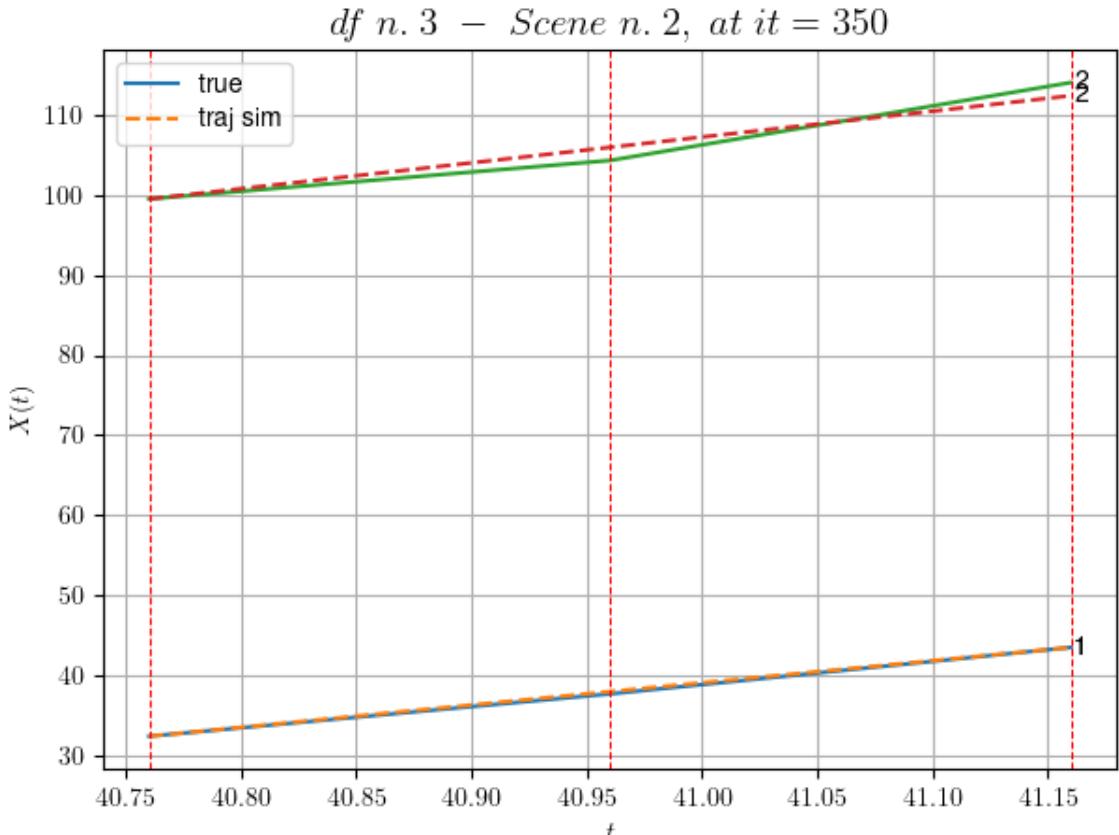


For scene 1/90

```
* use LR_NN=1e-05 with err=4.827485165046338 at it=24
* v0_scn_mean = 33.19651916561727
* MAE = 1.5844511841846307
```

df n.3, scene n.2/90

```
We have 2 time intervals inside [40.76,41.16]
* err= 0.9113570271552511
* Learning rate NN = 8.099998922261875e-06
* diff = 3.4514618263425945e-07
```



For scene 2/90

- * use LR_NN=1e-05 with err=1.314217420809764 at it=24
- * v0_scn_mean = 32.08077588692799
- * MAE = 0.9113569170898956

df n.3, scene n.3/90

We have 4 time intervals inside [79.56, 80.36]

- Time interval n.0: [79.56, 79.76]
 - * y_true: [24.92680088]
 - * v_ann: [21.99925994873047, 49.42636153730822]

- Time interval n.1: [79.76, 79.96]
 - * y_true: [25.18697287]
 - * v_ann: [22.51604461669922, 49.42636153730822]

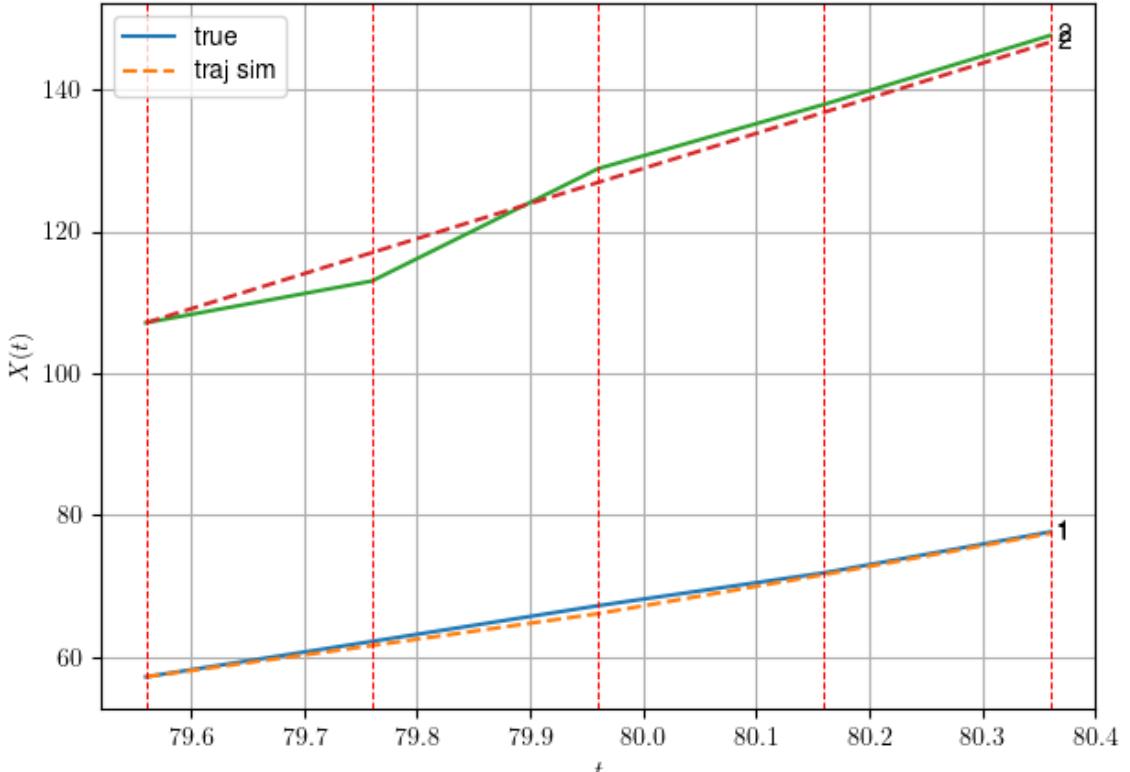
- Time interval n.2: [79.96, 80.16]
 - * y_true: [23.15223081]
 - * v_ann: [27.429399490356445, 49.42636153730822]

- Time interval n.3: [80.16, 80.36]
 - * y_true: [28.84312962]

```
* v_ann: [29.114904403686523, 49.42636153730822]
```

```
* err= 2.361524914972044
* Learning rate NN = 4.782968062500004e-06
* diff = 3.819540741778482e-05
```

df n. 3 – Scene n. 3, at it = 500



For scene 3/90

```
* use LR_NN=1e-05 with err=53.082252663072786 at it=24
* v0_scn_mean = 48.649307075964245
* MAE = 2.3594116018204394
```

df n.3, scene n.4/90

We have 5 time intervals inside [115.36, 116.36]

- Time interval n.0: [115.36, 115.56]
 - * y_true: [36.92160322]
 - * v_ann: [28.239547729492188, 42.476334717670575]

- Time interval n.1: [115.56, 115.76]
 - * y_true: [35.25200551]
 - * v_ann: [27.074556350708008, 42.476334717670575]

- Time interval n.2: [115.76, 115.96]
 - * y_true: [28.14198214]

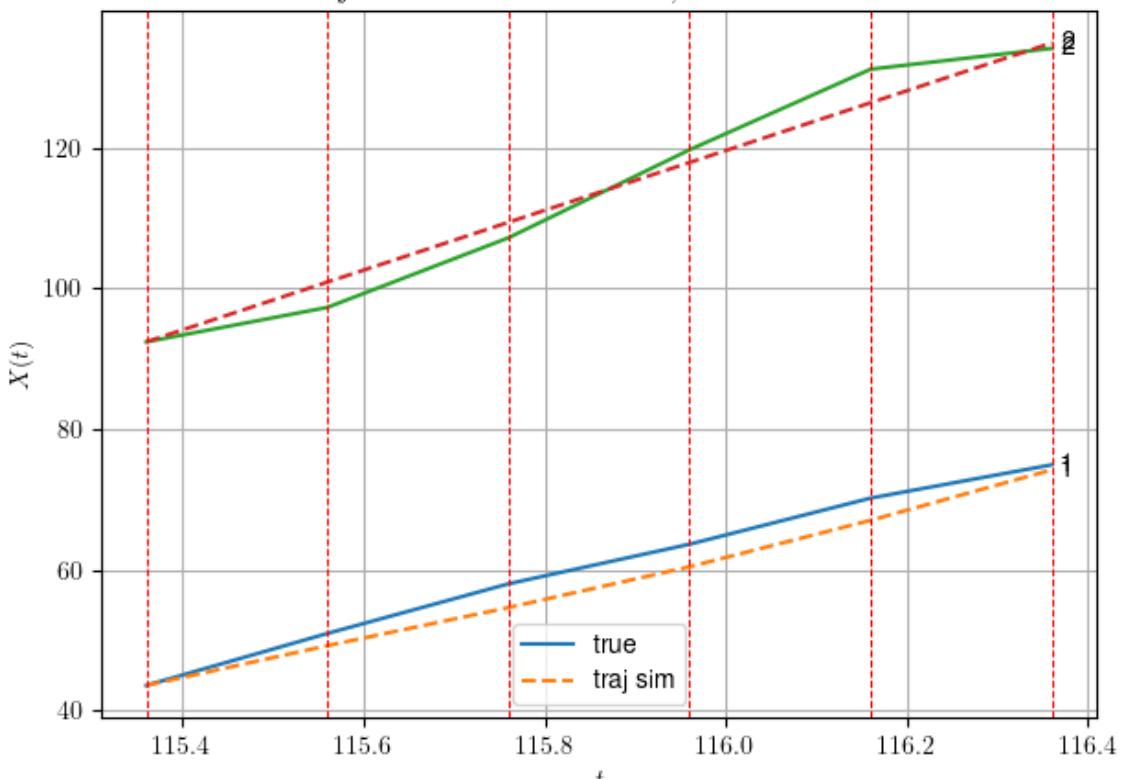
```
* v_ann: [28.98767852783203, 42.476334717670575]
```

```
- Time interval n.3: [115.96, 116.16]
* y_true: [32.75283438]
* v_ann: [33.00421905517578, 42.476334717670575]
```

```
- Time interval n.4: [116.16, 116.36]
* y_true: [23.66235705]
* v_ann: [35.874725341796875, 42.476334717670575]
```

```
* err= 6.618438475798978
* Learning rate NN = 3.874203684972599e-06
* diff = 0.016577735643142688
```

df n. 3 – Scene n. 4, at it = 500



For scene 4/90

```
* use LR_NN=1e-05 with err=41.501493588618004 at it=24
* v0_scn_mean = 41.97728132905922
* MAE = 6.607073189668688
```

df n.3, scene n.5/90

```
We have 17 time intervals inside [138.16,141.56]
- Time interval n.0: [138.16, 138.36]
```

```
* y_true: [20.20049512]
* v_ann: [24.991804122924805, 28.31863912796776]
```

```
- Time interval n.1: [138.36, 138.56]
* y_true: [34.05418098]
* v_ann: [26.68451690673828, 28.31863912796776]
```

```
- Time interval n.2: [138.56, 138.76]
* y_true: [19.55085484]
* v_ann: [24.42188835144043, 28.31863912796776]
```

```
- Time interval n.3: [138.76, 138.96]
* y_true: [25.71133535]
* v_ann: [30.06865692138672, 28.31863912796776]
```

```
- Time interval n.4: [138.96, 139.16]
* y_true: [28.44182357]
* v_ann: [30.175003051757812, 28.31863912796776]
```

```
- Time interval n.5: [139.16, 139.36]
* y_true: [31.62238978]
* v_ann: [29.63080596923828, 28.31863912796776]
```

```
- Time interval n.6: [139.36, 139.56]
* y_true: [17.15160439]
* v_ann: [31.592479705810547, 28.31863912796776]
```

```
- Time interval n.7: [139.56, 139.76]
* y_true: [37.57385655]
* v_ann: [30.074743270874023, 28.31863912796776]
```

```
- Time interval n.8: [139.76, 139.96]
* y_true: [21.65266443]
* v_ann: [28.649770736694336, 28.31863912796776]
```

```
- Time interval n.9: [139.96, 140.16]
* y_true: [32.03445568]
* v_ann: [31.694015502929688, 28.31863912796776]
```

```
- Time interval n.10: [140.16, 140.36]
```

```
* y_true: [31.91506312]
* v_ann: [25.27345085144043, 28.31863912796776]
```

```
- Time interval n.11: [140.36, 140.56]
* y_true: [23.65435061]
* v_ann: [24.963748931884766, 28.31863912796776]
```

```
- Time interval n.12: [140.56, 140.76]
* y_true: [42.04863469]
* v_ann: [28.369552612304688, 28.31863912796776]
```

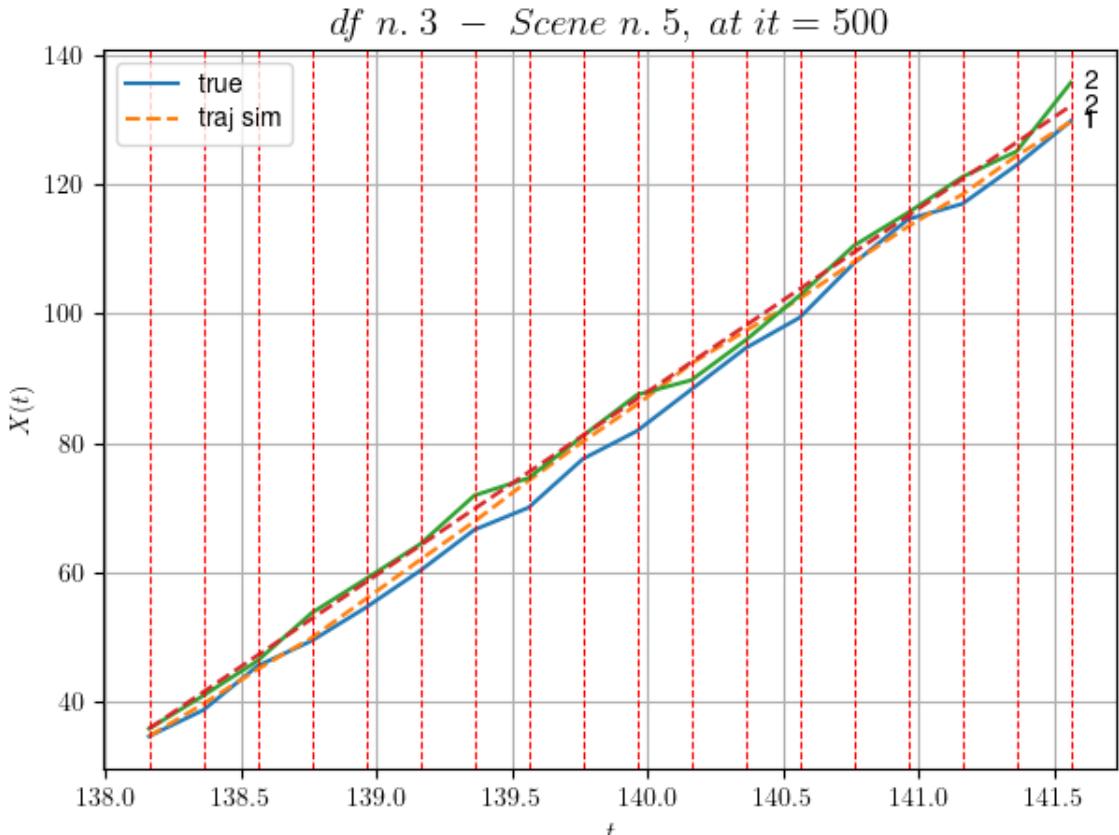
```
- Time interval n.13: [140.76, 140.96]
* y_true: [33.92792147]
* v_ann: [27.42241668701172, 28.31863912796776]
```

```
- Time interval n.14: [140.96, 141.16]
* y_true: [11.9131035]
* v_ann: [24.791738510131836, 28.31863912796776]
```

```
- Time interval n.15: [141.16, 141.36]
* y_true: [30.01833255]
* v_ann: [29.73835563659668, 28.31863912796776]
```

```
- Time interval n.16: [141.36, 141.56]
* y_true: [33.94025545]
* v_ann: [26.455400466918945, 28.31863912796776]
```

```
* err= 3.4241548816020204
* Learning rate NN = 3.090312748099677e-05
```



For scene 5/90

- * use LR_NN=0.001 with err=9.063437808602226 at it=24
- * v0_scn_mean = 28.38589356283623
- * MAE = 3.3812987720254783

df n.3, scene n.6/90

We have 4 time intervals inside [154.56, 155.36]

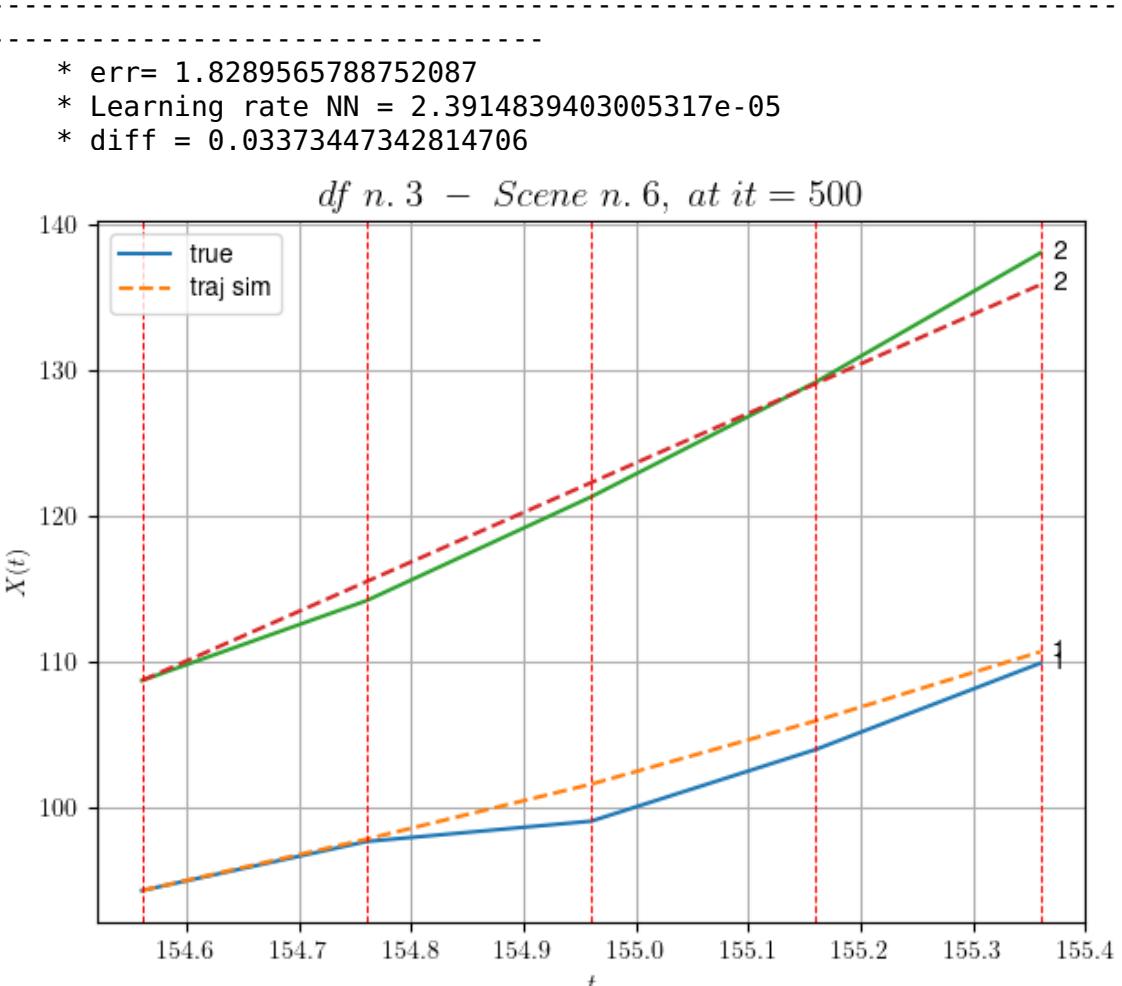
- Time interval n.0: [154.56, 154.76]
 - * y_true: [16.792902]
 - * v_ann: [17.592931747436523, 33.88242010375711]

- Time interval n.1: [154.76, 154.96]
 - * y_true: [6.96129808]
 - * v_ann: [18.840267181396484, 33.88242010375711]

- Time interval n.2: [154.96, 155.16]
 - * y_true: [24.54499404]
 - * v_ann: [21.67194366455078, 33.88242010375711]

- Time interval n.3: [155.16, 155.36]
 - * y_true: [29.55644658]

```
* v_ann: [23.635631561279297, 33.88242010375711]
```



For scene 6/90

```
* use LR_NN=5e-05 with err=3.9270449035436124 at it=24  

* v0_scn_mean = 33.72712329963892  

* MAE = 1.8289565788752087
```

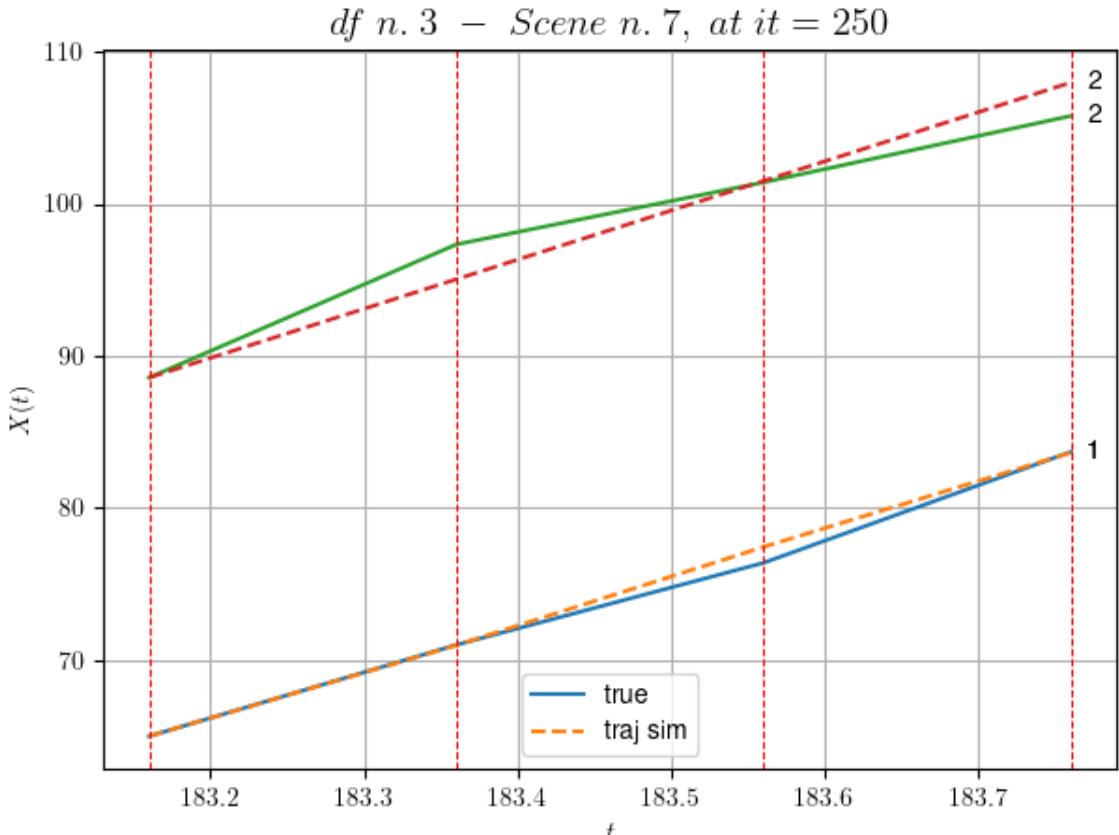
df n.3, scene n.7/90

We have 3 time intervals inside [183.16,183.76]

```
* err= 1.395543068898561  

* Learning rate NN = 8.099998922261875e-06  

* diff = 7.943297171131292e-07
```



For scene 7/90

- * use LR_NN=1e-05 with err=1.2261878159890875 at it=24
- * v0_scn_mean = 32.1288651449362
- * MAE = 1.210431336181723

df n.3, scene n.8/90

We have 8 time intervals inside [199.96, 201.56]

- Time interval n.0: [199.96, 200.16]
 - * y_true: [39.74420354]
 - * v_ann: [37.64179611206055, 35.482633927758194]

- Time interval n.1: [200.16, 200.36]
 - * y_true: [28.52349607]
 - * v_ann: [37.335391998291016, 35.482633927758194]

- Time interval n.2: [200.36, 200.56]
 - * y_true: [36.06528968]
 - * v_ann: [36.181949615478516, 35.482633927758194]

- Time interval n.3: [200.56, 200.76]
 - * y_true: [38.41658036]

```
* v_ann: [39.016883850097656, 35.482633927758194]
```

```
- Time interval n.4: [200.76, 200.96]
* y_true: [35.78711418]
* v_ann: [36.43498992919922, 35.482633927758194]
```

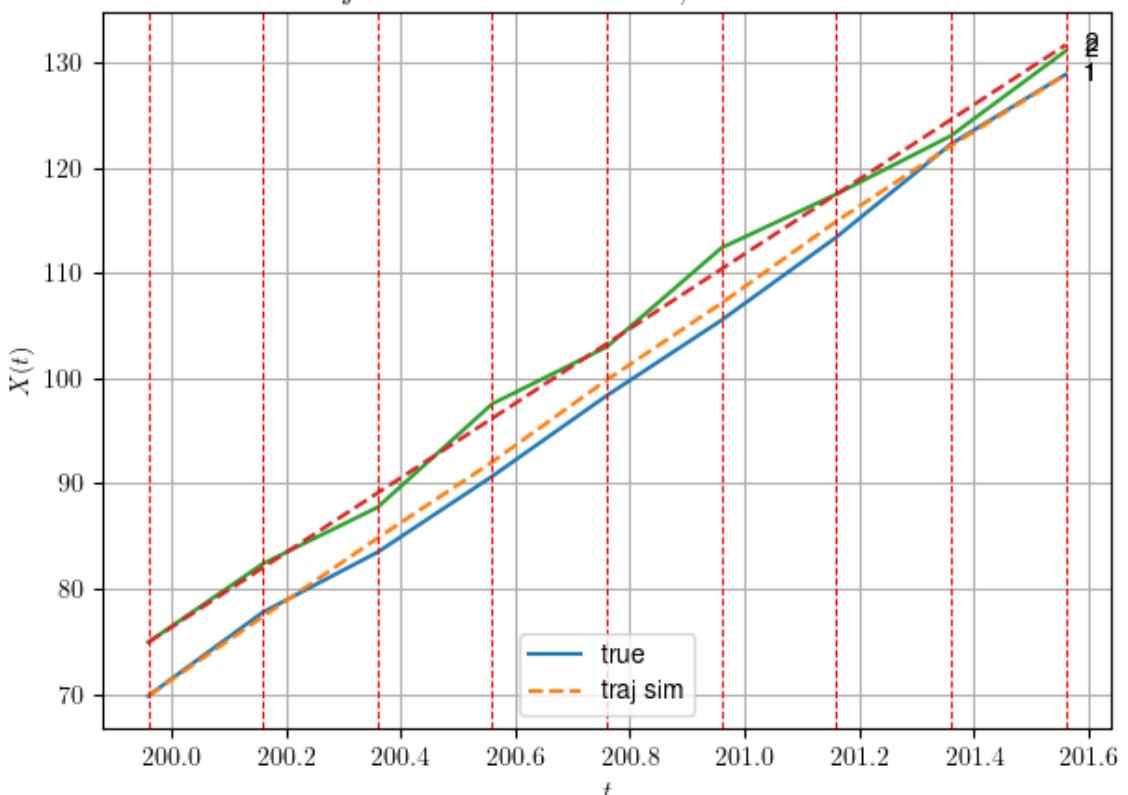
```
- Time interval n.5: [200.96, 201.16]
* y_true: [39.39907556]
* v_ann: [38.82911682128906, 35.482633927758194]
```

```
- Time interval n.6: [201.16, 201.36]
* y_true: [44.30182053]
* v_ann: [35.951332092285156, 35.482633927758194]
```

```
- Time interval n.7: [201.36, 201.56]
* y_true: [33.01988723]
* v_ann: [33.690338134765625, 35.482633927758194]
```

```
* err= 1.2028286372357218
* Learning rate NN = 0.00010294552339473739
* diff = 0.00902383193684142
```

df n. 3 – Scene n. 8, at it = 500



For scene 8/90

* use LR_NN=0.0005 with err=15.98555528449115 at it=24

```
* vθ_scn_mean = 35.2633285706898
* MAE = 1.1876069607602013
```

```
=====
```

df n.3, scene n.9/90

```
=====
```

We have 4 time intervals inside [215.56,216.36]

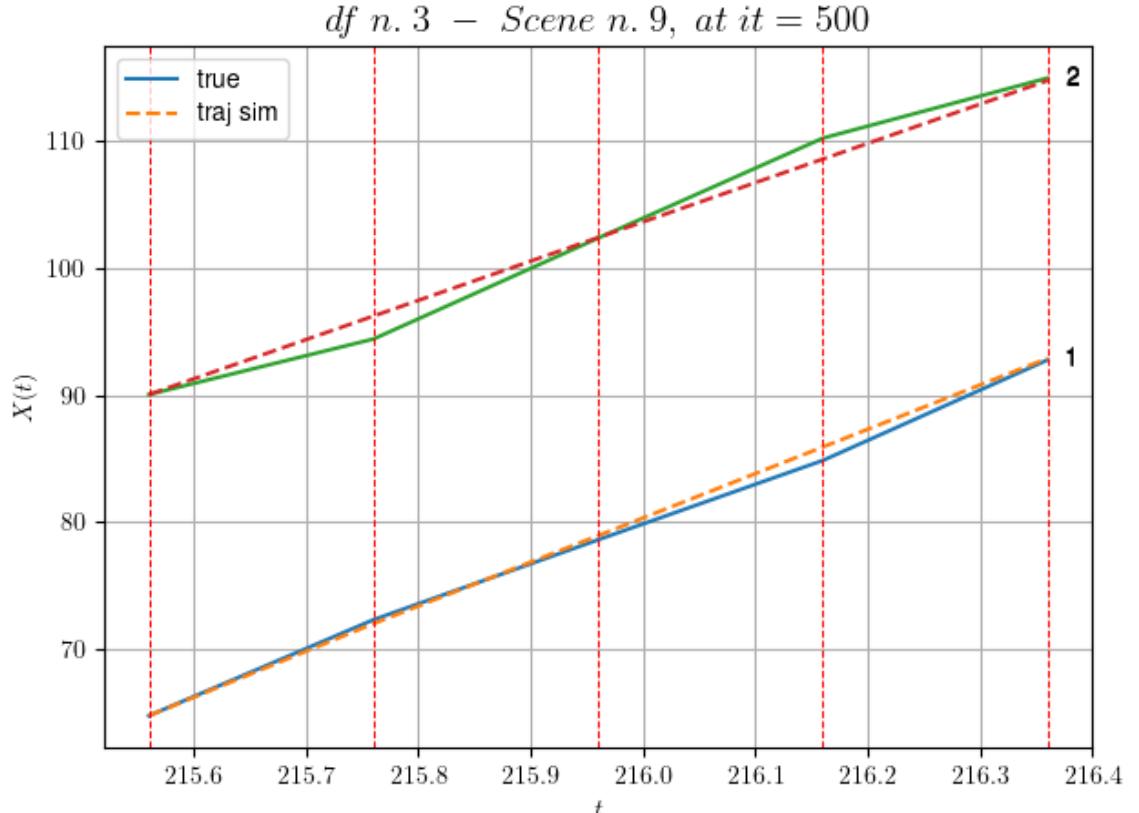
- Time interval n.0: [215.56, 215.76]
 - * y_true: [37.72349345]
 - * v_ann: [36.20377731323242, 30.842897264970137]

- Time interval n.1: [215.76, 215.96]
 - * y_true: [31.43339605]
 - * v_ann: [34.55247497558594, 30.842897264970137]

- Time interval n.2: [215.96, 216.16]
 - * y_true: [31.16401611]
 - * v_ann: [34.86131286621094, 30.842897264970137]

- Time interval n.3: [216.16, 216.36]
 - * y_true: [39.50602884]
 - * v_ann: [34.82705307006836, 30.842897264970137]

```
* err= 0.7331138752207658
* Learning rate NN = 2.3914839403005317e-05
* diff = 0.0010116633805372610
```



For scene 9/90

- * use LR_NN=5e-05 with err=0.8651022391062843 at it=24
 - * v0_scn_mean = 30.809181374377552
 - * MAE = 0.7331138752207658
-
-

df n.3, scene n.10/90

We have 9 time intervals inside [234.76, 236.56]

- Time interval n.0: [234.76, 234.96]
 - * y_true: [32.05217047]
 - * v_ann: [25.452722549438477, 40.372106906957946]
-

- Time interval n.1: [234.96, 235.16]
 - * y_true: [29.65244542]
 - * v_ann: [25.76206398010254, 40.372106906957946]
-

- Time interval n.2: [235.16, 235.36]
 - * y_true: [16.45155324]
 - * v_ann: [26.11163902282715, 40.372106906957946]
-

- Time interval n.3: [235.36, 235.56]
 - * y_true: [26.65283483]
 - * v_ann: [22.721479415893555, 40.372106906957946]

```
- Time interval n.4: [235.56, 235.76]
 * y_true: [25.00304068]
 * v_ann: [23.585433959960938, 40.372106906957946]

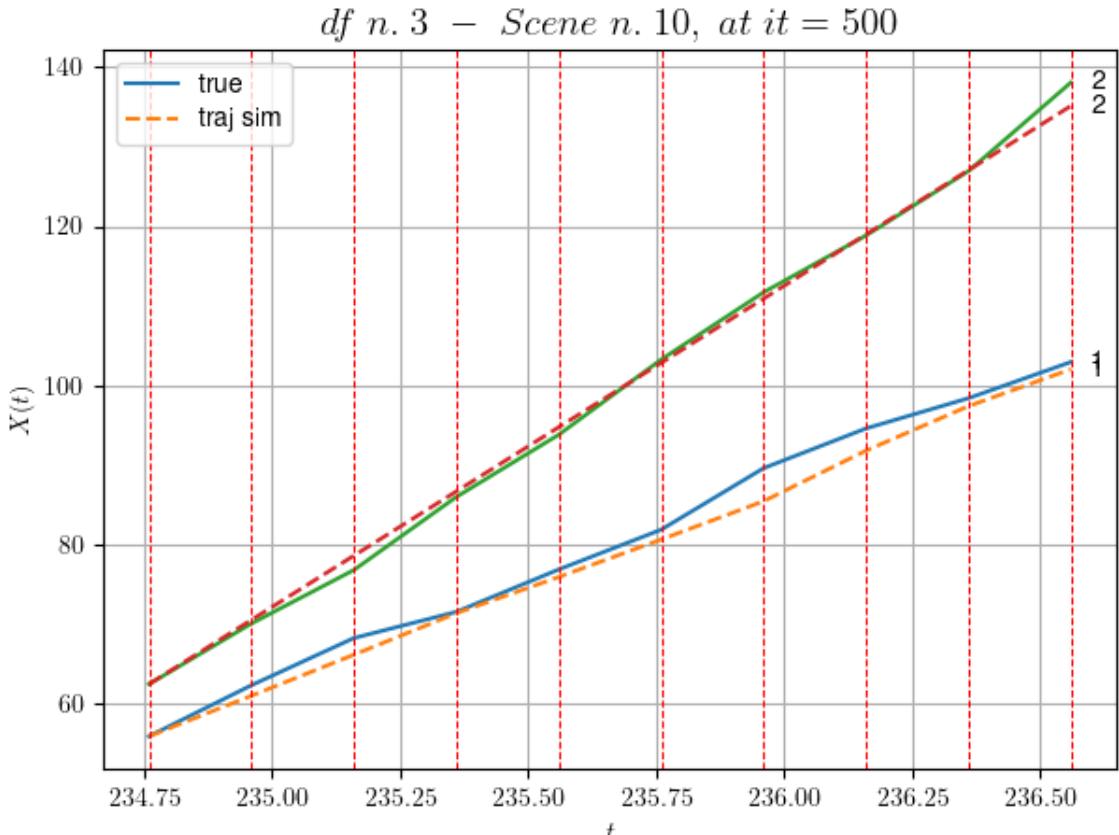
- Time interval n.5: [235.76, 235.96]
 * y_true: [38.65548213]
 * v_ann: [24.061378479003906, 40.372106906957946]

- Time interval n.6: [235.96, 236.16]
 * y_true: [24.9540797]
 * v_ann: [31.78660011291504, 40.372106906957946]

- Time interval n.7: [236.16, 236.36]
 * y_true: [19.00340646]
 * v_ann: [27.939002990722656, 40.372106906957946]

- Time interval n.8: [236.36, 236.56]
 * y_true: [22.75284466]
 * v_ann: [23.209369659423828, 40.372106906957946]

* err= 2.490863647064374
* Learning rate NN = 8.338587213074788e-05
* diff = 0.32781364128389745
```



For scene 10/90

- * use LR_NN=0.0005 with err=99.96002902544947 at it=24
- * v0_scn_mean = 39.95722263075994
- * MAE = 2.490863647064374

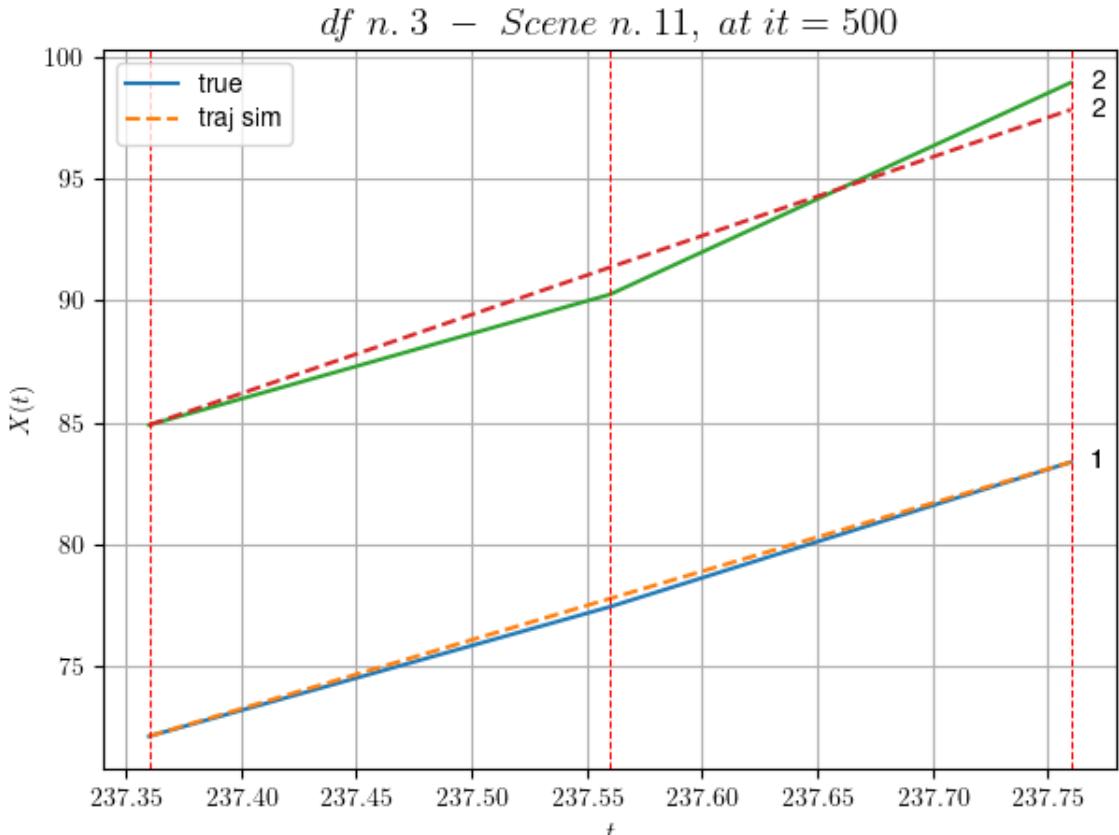
df n.3, scene n.11/90

We have 2 time intervals inside [237.36, 237.76]

- Time interval n.0: [237.36, 237.56]
 - * y_true: [26.58288419]
 - * v_ann: [28.26421356201172, 32.37177876450554]

- Time interval n.1: [237.56, 237.76]
 - * y_true: [29.70372271]
 - * v_ann: [28.016695022583008, 32.37177876450554]

- * err= 0.4321908472967267
- * Learning rate NN = 3.6449993785936385e-05
- * diff = 9.53202313785928e-06



For scene 11/90

- * use LR_NN=5e-05 with err=0.7976831253261989 at it=24
- * v0_scn_mean = 32.2769076139428
- * MAE = 0.43191740013327384

df n.3, scene n.12/90

We have 12 time intervals inside [268.56, 270.96]

- Time interval n.0: [268.56, 268.76]
 - * y_true: [29.3500352]
 - * v_ann: [28.987470626831055, 29.568023140125362]

- Time interval n.1: [268.76, 268.96]
 - * y_true: [29.08008566]
 - * v_ann: [28.979490280151367, 29.568023140125362]

- Time interval n.2: [268.96, 269.16]
 - * y_true: [24.64016214]
 - * v_ann: [28.978700637817383, 29.568023140125362]

- Time interval n.3: [269.16, 269.36]
 - * y_true: [27.79028745]

* v_ann: [29.074092864990234, 29.568023140125362]

- Time interval n.4: [269.36, 269.56]
* y_true: [27.06043503]
* v_ann: [29.087194442749023, 29.568023140125362]

- Time interval n.5: [269.56, 269.76]
* y_true: [32.18076388]
* v_ann: [29.12893295288086, 29.568023140125362]

- Time interval n.6: [269.76, 269.96]
* y_true: [32.77104018]
* v_ann: [28.954185485839844, 29.568023140125362]

- Time interval n.7: [269.96, 270.16]
* y_true: [29.95131945]
* v_ann: [29.059186935424805, 29.568023140125362]

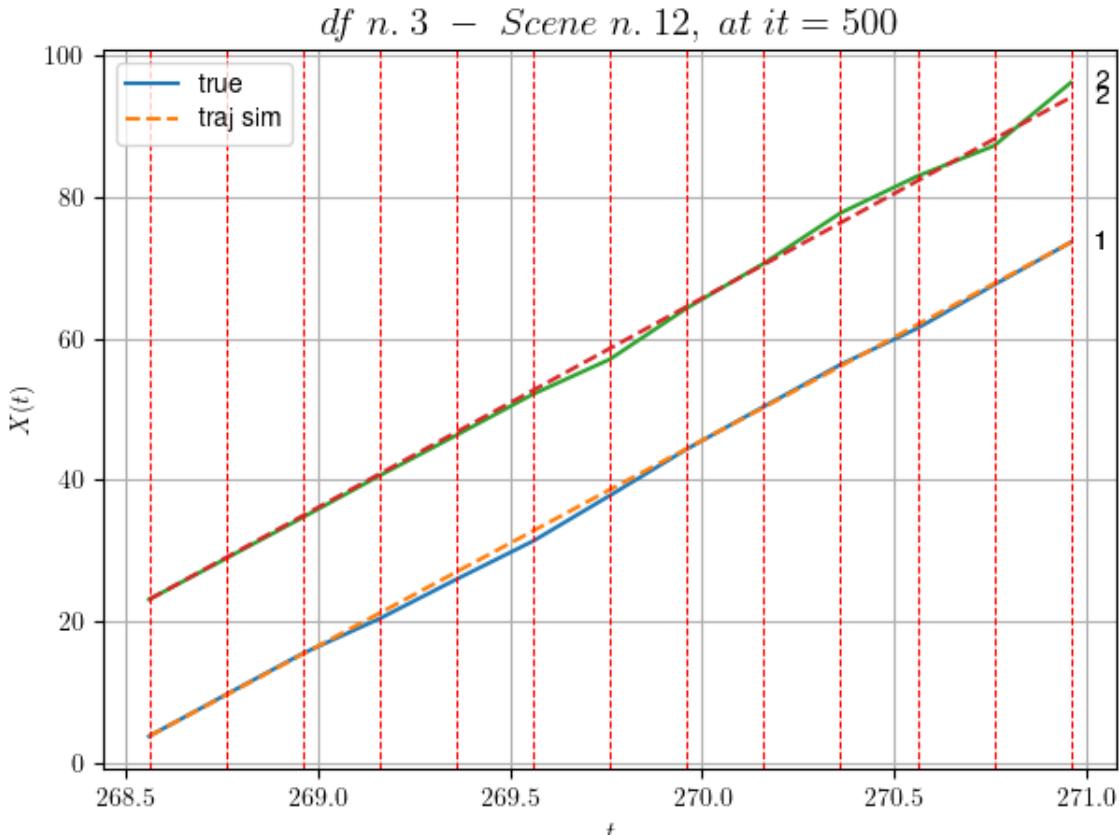
- Time interval n.8: [270.16, 270.36]
* y_true: [29.70158012]
* v_ann: [29.10633087158203, 29.568023140125362]

- Time interval n.9: [270.36, 270.56]
* y_true: [25.63174114]
* v_ann: [29.282424926757812, 29.568023140125362]

- Time interval n.10: [270.56, 270.76]
* y_true: [30.75243246]
* v_ann: [29.269420623779297, 29.568023140125362]

- Time interval n.11: [270.76, 270.96]
* y_true: [30.06304641]
* v_ann: [29.020736694335938, 29.568023140125362]

* err= 0.5933023413083078
* Learning rate NN = 8.862932645570254e-07
* diff = 0.00038433447617169936



For scene 12/90

- * use LR_NN=1e-05 with err=0.6113007845196522 at it=24
- * v0_scn_mean = 29.585302214516858
- * MAE = 0.5744776101482597

df n.3, scene n.13/90

We have 10 time intervals inside [292.56, 294.56]

- Time interval n.0: [292.56, 292.76]
 - * y_true: [20.40029016]
 - * v_ann: [18.526592254638672, 25.74098624838141]

- Time interval n.1: [292.76, 292.96]
 - * y_true: [19.95039872]
 - * v_ann: [19.1118106842041, 25.74098624838141]

- Time interval n.2: [292.96, 293.16]
 - * y_true: [22.17055226]
 - * v_ann: [19.9495792388916, 25.74098624838141]

- Time interval n.3: [293.16, 293.36]
 - * y_true: [19.53060254]

```
* v_ann: [20.687458038330078, 25.74098624838141]
```

```
- Time interval n.4: [293.36, 293.56]
* y_true: [22.27085524]
* v_ann: [20.897951126098633, 25.74098624838141]
```

```
- Time interval n.5: [293.56, 293.76]
* y_true: [27.53130107]
* v_ann: [21.748855590820312, 25.74098624838141]
```

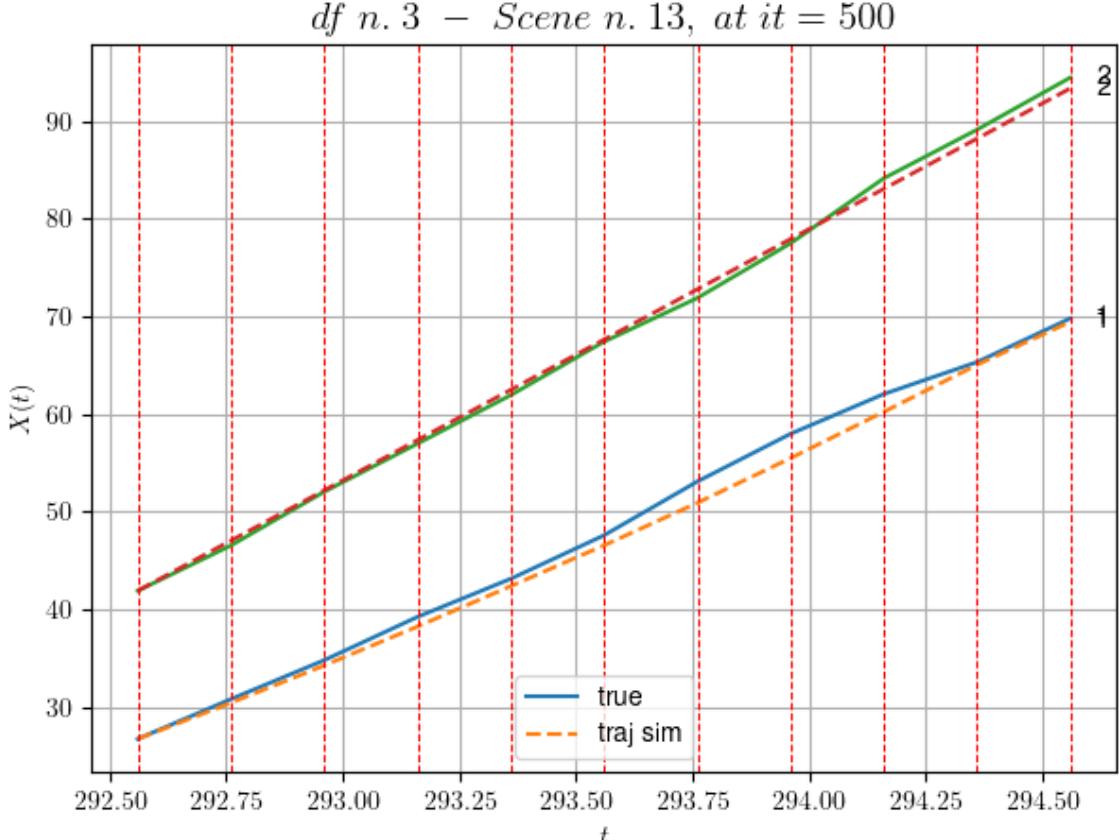
```
- Time interval n.6: [293.76, 293.96]
* y_true: [24.45137841]
* v_ann: [22.898460388183594, 25.74098624838141]
```

```
- Time interval n.7: [293.96, 294.16]
* y_true: [20.38135993]
* v_ann: [23.745275497436523, 25.74098624838141]
```

```
- Time interval n.8: [294.16, 294.36]
* y_true: [16.38122414]
* v_ann: [24.0977840423584, 25.74098624838141]
```

```
- Time interval n.9: [294.36, 294.56]
* y_true: [22.38193897]
* v_ann: [22.01236343383789, 25.74098624838141]
```

```
* err= 1.024536138361586
* Learning rate NN = 0.00013508510892279446
* diff = 0.0672218875991697
```



For scene 13/90

```
* use LR_NN=0.001 with err=11.977562856775846 at it=24
* v0_scn_mean = 25.91134679841376
* MAE = 0.4133116585917413
```

df n.3, scene n.14/90

We have 4 time intervals inside [299.76, 300.56]

- Time interval n.0: [299.76, 299.96]
 - * y_true: [31.41374449]
 - * v_ann: [32.15617370605469, 35.55620181997004]

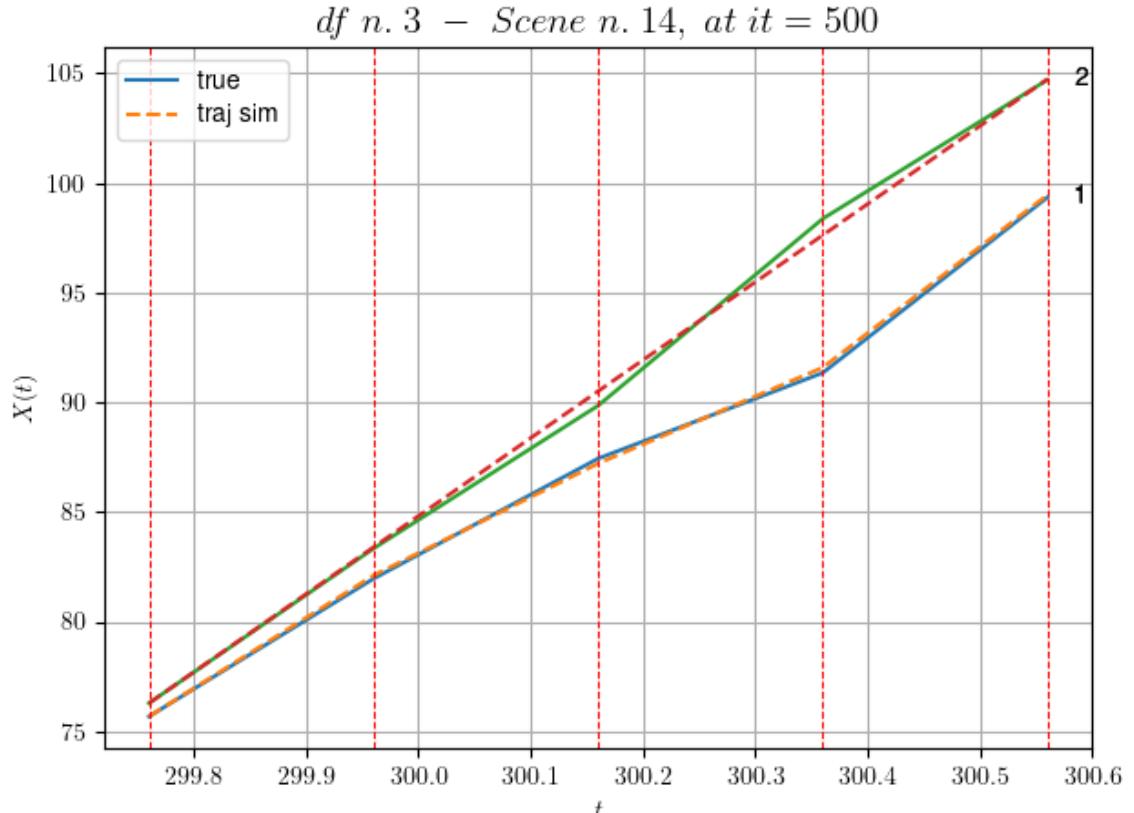
- Time interval n.1: [299.96, 300.16]
 - * y_true: [27.37378642]
 - * v_ann: [25.507234573364258, 35.55620181997004]

- Time interval n.2: [300.16, 300.36]
 - * y_true: [19.53299053]
 - * v_ann: [21.85931396484375, 35.55620181997004]

- Time interval n.3: [300.36, 300.56]
 - * y_true: [39.98711868]

```
* v_ann: [39.3355598449707, 35.55620181997004]
```

```
* err= 0.11402711597623369
* Learning rate NN = 0.000478296831715852
* diff = 0.00028744631728053194
```



For scene 14/90

```
* use LR_NN=0.001 with err=6.029290049040998 at it=24
* v0_scn_mean = 35.33395374721219
* MAE = 0.11402711597623369
```

df n.3, scene n.15/90

We have 5 time intervals inside [331.56, 332.56]

- Time interval n.0: [331.56, 331.76]
 - * y_true: [29.36025951]
 - * v_ann: [28.8897647857666, 25.002166879948597]

- Time interval n.1: [331.76, 331.96]
 - * y_true: [26.13036592]
 - * v_ann: [27.31231117248535, 25.002166879948597]

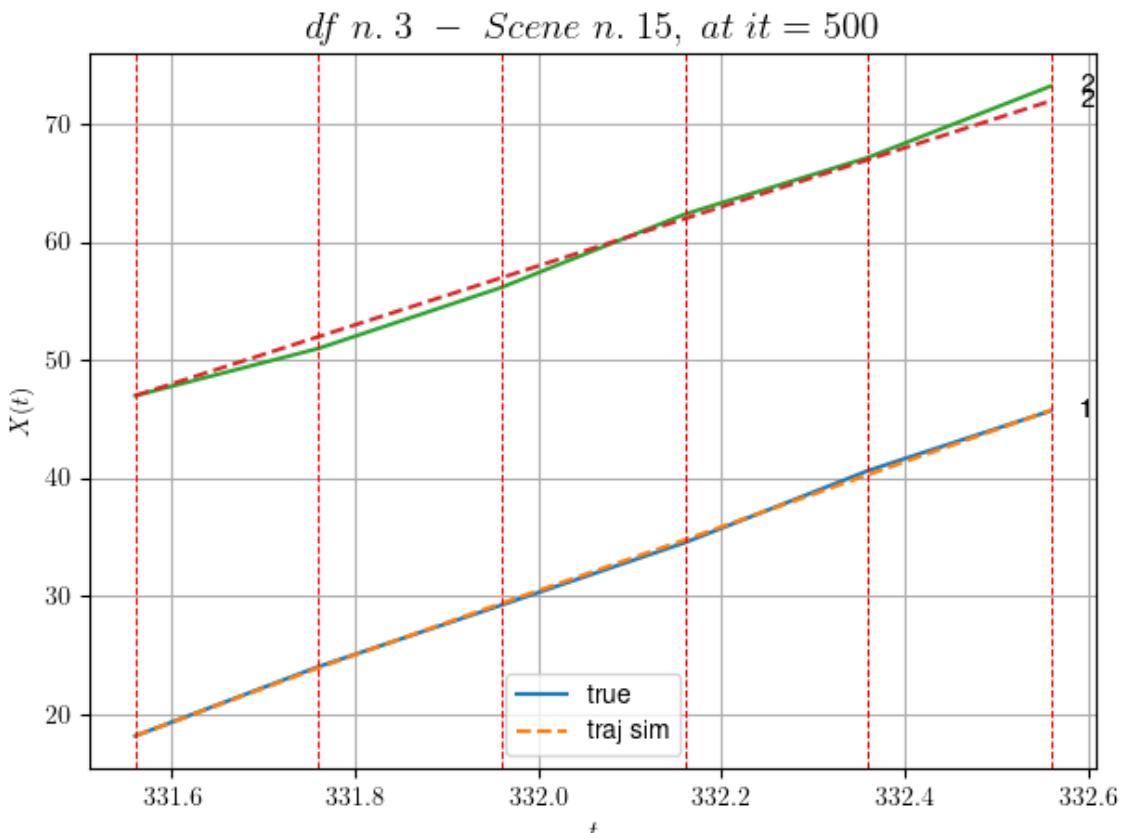
- Time interval n.2: [331.96, 332.16]
 - * y_true: [26.45053806]

* v_ann: [26.908681869506836, 25.002166879948597]

- Time interval n.3: [332.16, 332.36]
 * y_true: [30.48083307]
 * v_ann: [27.601093292236328, 25.002166879948597]

- Time interval n.4: [332.36, 332.56]
 * y_true: [25.46093572]
 * v_ann: [27.312088012695312, 25.002166879948597]

* err= 0.30177048371296544
 * Learning rate NN = 1.9371018424862996e-05
 * diff = 0.0006203560824910581



For scene 15/90

* use LR_NN=5e-05 with err=3.961730073865328 at it=24
 * v0_scn_mean = 25.202080204712793
 * MAE = 0.27257148317834945

df n.3, scene n.16/90

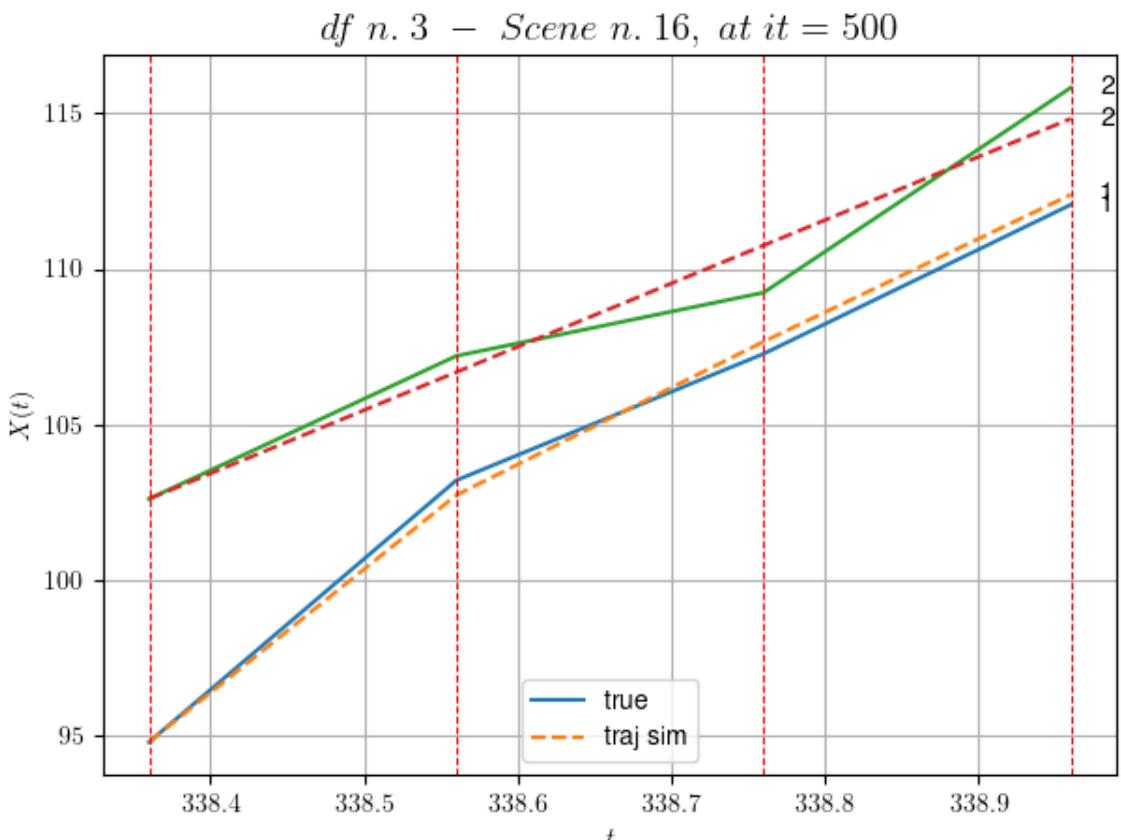
We have 3 time intervals inside [338.36,338.96]
 - Time interval n.0: [338.36, 338.56]

```
* y_true: [42.04765341]
* v_ann: [39.676082611083984, 20.358070226672268]
```

```
- Time interval n.1: [338.56, 338.76]
* y_true: [20.3284091]
* v_ann: [24.648916244506836, 20.358070226672268]
```

```
- Time interval n.2: [338.76, 338.96]
* y_true: [23.95541551]
* v_ann: [23.622825622558594, 20.358070226672268]
```

```
* err= 0.5057498297532829
* Learning rate NN = 0.0005904899444431067
* diff = 0.002697617566410293
```



For scene 16/90

```
* use LR_NN=0.001 with err=7.185019337726854 at it=24
* v0_scn_mean = 20.743747417532028
* MAE = 0.5057498297532829
```

df n.3, scene n.17/90

We have 4 time intervals inside [377.56, 378.36]

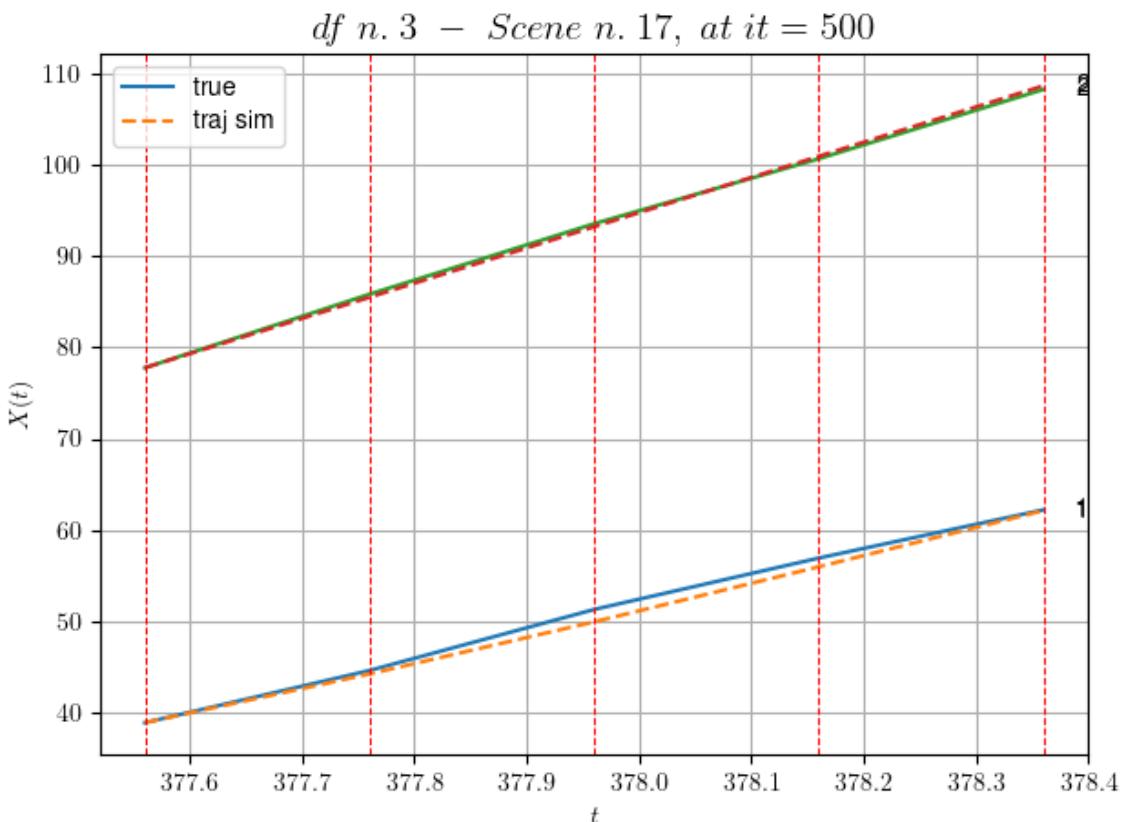
- Time interval n.0: [377.56, 377.76]
 * y_true: [28.58096669]
 * v_ann: [26.666946411132812, 38.59992828377932]

- Time interval n.1: [377.76, 377.96]
 * y_true: [33.41151221]
 * v_ann: [28.54804801940918, 38.59992828377932]

- Time interval n.2: [377.96, 378.16]
 * y_true: [28.14158578]
 * v_ann: [30.137496948242188, 38.59992828377932]

- Time interval n.3: [378.16, 378.36]
 * y_true: [26.41181793]
 * v_ann: [30.778223037719727, 38.59992828377932]

* err= 0.33669207077306956
 * Learning rate NN = 4.782968062500004e-06
 * diff = 3.265181222078528e-05



For scene 17/90

* use LR_NN=1e-05 with err=8.702617615575305 at it=24
 * v0_scn_mean = 38.25593115249431
 * MAE = 0.3334842774185387

```
df n.3, scene n.18/90
```

```
=====
=====

We have 6 time intervals inside [385.76,386.96]
- Time interval n.0: [385.76, 385.96]
  * y_true: [27.95094629]
  * v_ann: [35.407894134521484, 27.617874781176415]

-----
- Time interval n.1: [385.96, 386.16]
  * y_true: [33.20147506]
  * v_ann: [34.852638244628906, 27.617874781176415]

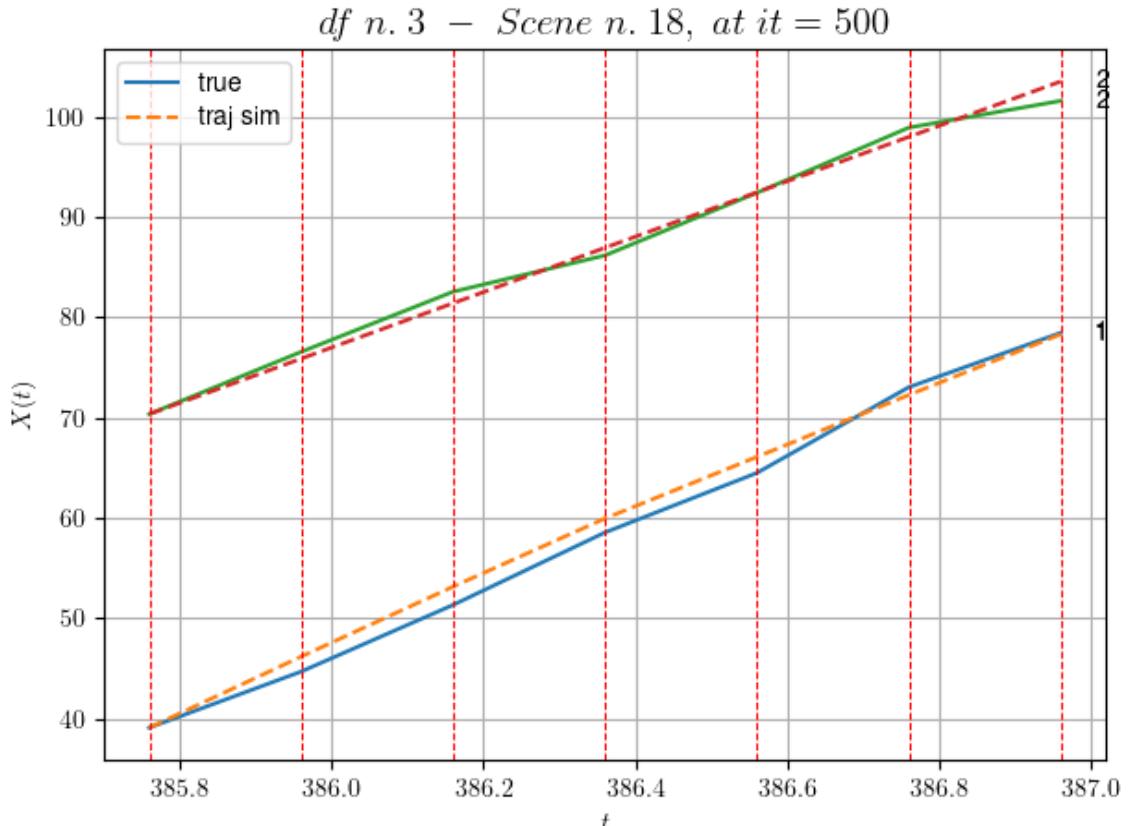
-----
- Time interval n.2: [386.16, 386.36]
  * y_true: [36.102098]
  * v_ann: [33.94713592529297, 27.617874781176415]

-----
- Time interval n.3: [386.36, 386.56]
  * y_true: [29.65215787]
  * v_ann: [30.681468963623047, 27.617874781176415]

-----
- Time interval n.4: [386.56, 386.76]
  * y_true: [42.70388188]
  * v_ann: [30.860925674438477, 27.617874781176415]

-----
- Time interval n.5: [386.76, 386.96]
  * y_true: [27.10298598]
  * v_ann: [30.205421447753906, 27.617874781176415]

-----
* err= 1.2553697310463996
* Learning rate NN = 3.138104875688441e-05
* diff = 0.001892491886959391
```



For scene 18/90

- * use LR_NN=0.0001 with err=3.170380835919774 at it=24
- * v0_scn_mean = 27.71315978991173
- * MAE = 1.0471504862499295

df n.3, scene n.19/90

We have 4 time intervals inside [402.76, 403.56]

- Time interval n.0: [402.76, 402.96]
 - * y_true: [32.26367754]
 - * v_ann: [33.4909782409668, 34.51967072229343]

- Time interval n.1: [402.96, 403.16]
 - * y_true: [31.06421017]
 - * v_ann: [33.063385009765625, 34.51967072229343]

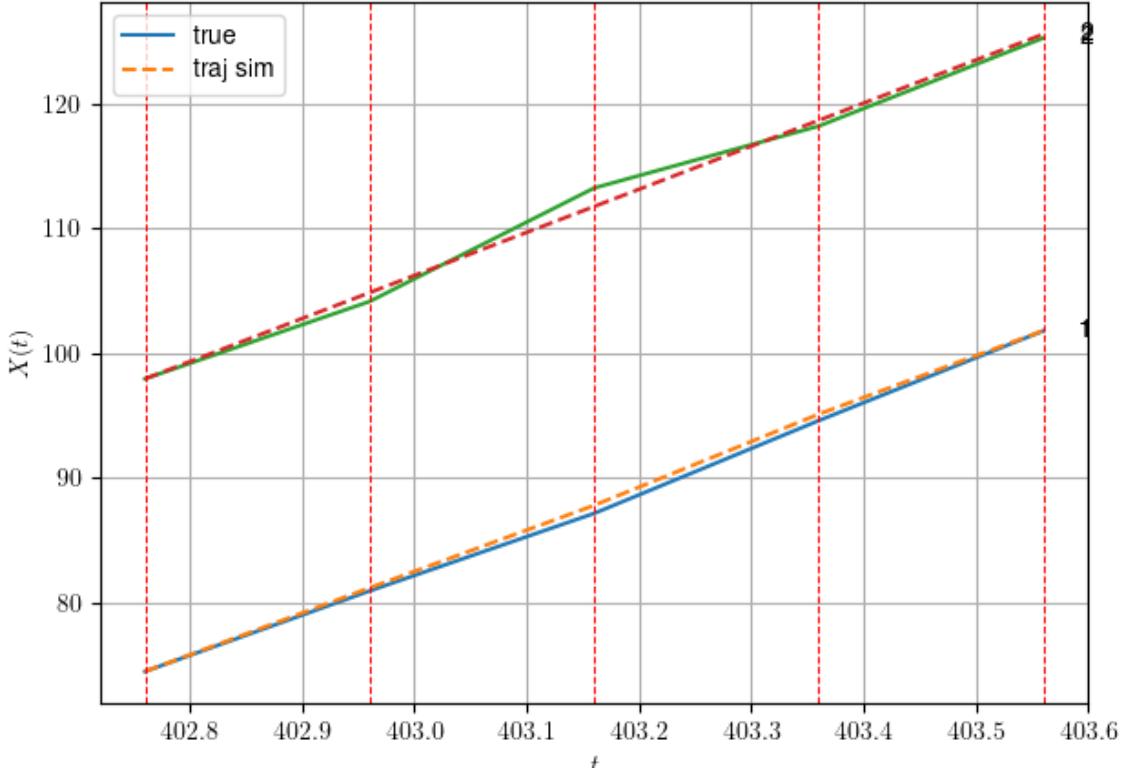
- Time interval n.2: [403.16, 403.36]
 - * y_true: [37.17770982]
 - * v_ann: [36.531829833984375, 34.51967072229343]

- Time interval n.3: [403.36, 403.56]
 - * y_true: [35.95654106]

```
* v_ann: [33.47088623046875, 34.51967072229343]
```

```
* err= 0.3750495095762395
* Learning rate NN = 2.3914839403005317e-05
* diff = 1 150277800251410270.05
```

df n. 3 – Scene n. 19, at it = 500



For scene 19/90

```
* use LR_NN=5e-05 with err=2.7618303664659036 at it=24
* v0_scn_mean = 34.33888389343601
* MAE = 0.37442566821343237
```

df n.3, scene n.20/90

We have 5 time intervals inside [417.16, 418.16]

- Time interval n.0: [417.16, 417.36]
 - * y_true: [27.85257929]
 - * v_ann: [31.498796463012695, 31.447990123716178]

- Time interval n.1: [417.36, 417.56]
 - * y_true: [31.20340101]
 - * v_ann: [31.532665252685547, 31.447990123716178]

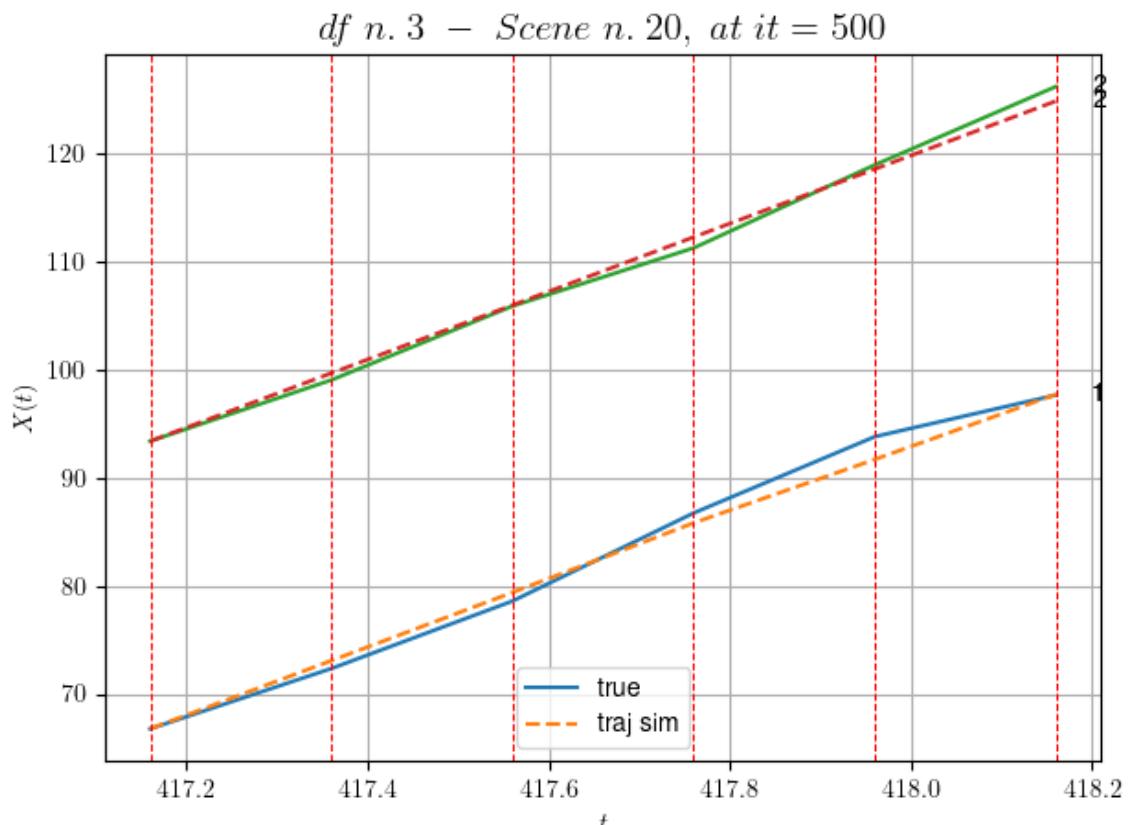
- Time interval n.2: [417.56, 417.76]
 - * y_true: [40.70532339]

```
* v_ann: [32.15993881225586, 31.447990123716178]
```

- Time interval n.3: [417.76, 417.96]
 - * y_true: [35.30550423]
 - * v_ann: [29.346616744995117, 31.447990123716178]

- Time interval n.4: [417.96, 418.16]
 - * y_true: [19.25337396]
 - * v_ann: [30.084381103515625, 31.447990123716178]

- * err= 0.8179840028943226
- * Learning rate NN = 3.874203684972599e-06
- * diff = 0 001398972701878498



For scene 20/90

- * use LR_NN=1e-05 with err=1.6900166190157402 at it=24
- * v0_scn_mean = 31.39007051877843
- * MAE = 0.8141774114620832

df n.3, scene n.21/90

We have 2 time intervals inside [427.36,427.76]

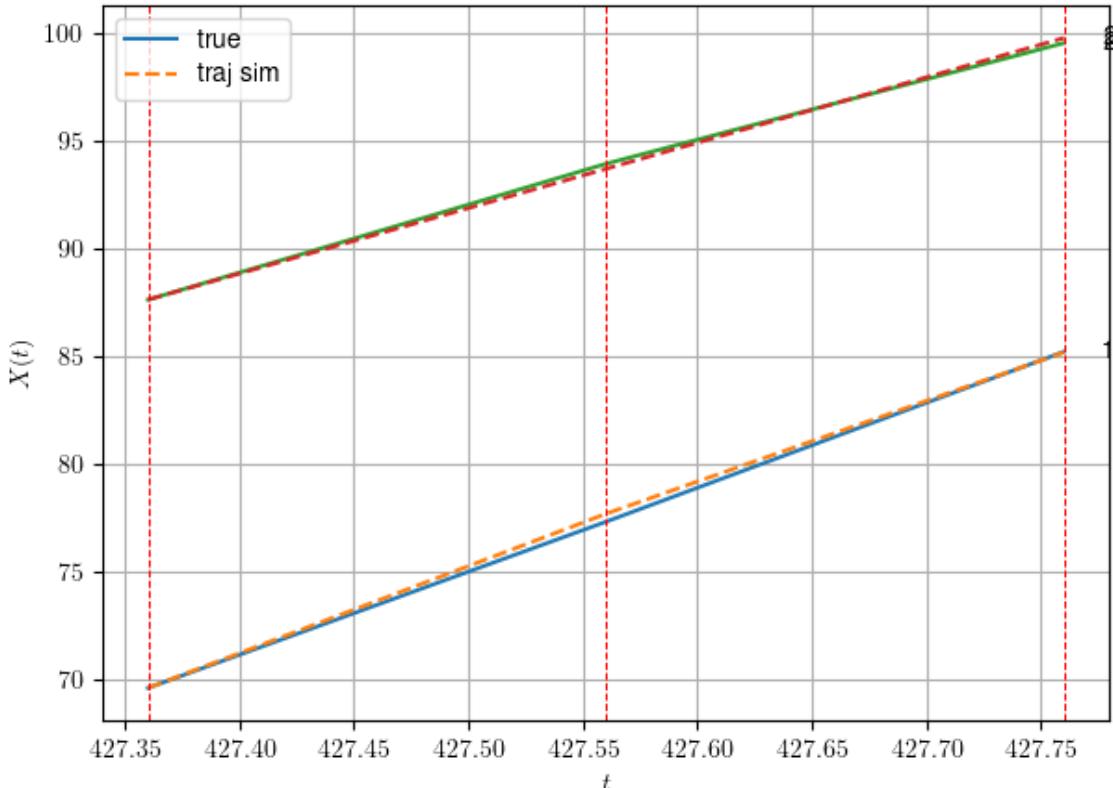
- Time interval n.0: [427.36, 427.56]
 - * y_true: [38.56400372]

```
* v_ann: [40.40679931640625, 30.361525596812843]
```

- Time interval n.1: [427.56, 427.76]
 - * y_true: [39.44508031]
 - * v_ann: [37.45541000366211, 30.361525596812843]

- * err= 0.0411364564951634
- * Learning rate NN = 3.6449993785936385e-05
- * diff = 5.1064977280856905e-06

df n. 3 – Scene n. 21, at it = 500



For scene 21/90

- * use LR_NN=5e-05 with err=0.04398166810181418 at it=24
- * v0_scn_mean = 30.347064572943687
- * MAE = 0.036307870505269235

df n.3, scene n.22/90

We have 3 time intervals inside [431.76,432.36]

- Time interval n.0: [431.76, 431.96]
 - * y_true: [42.05694869]
 - * v_ann: [42.112789154052734, 25.896889333920278]

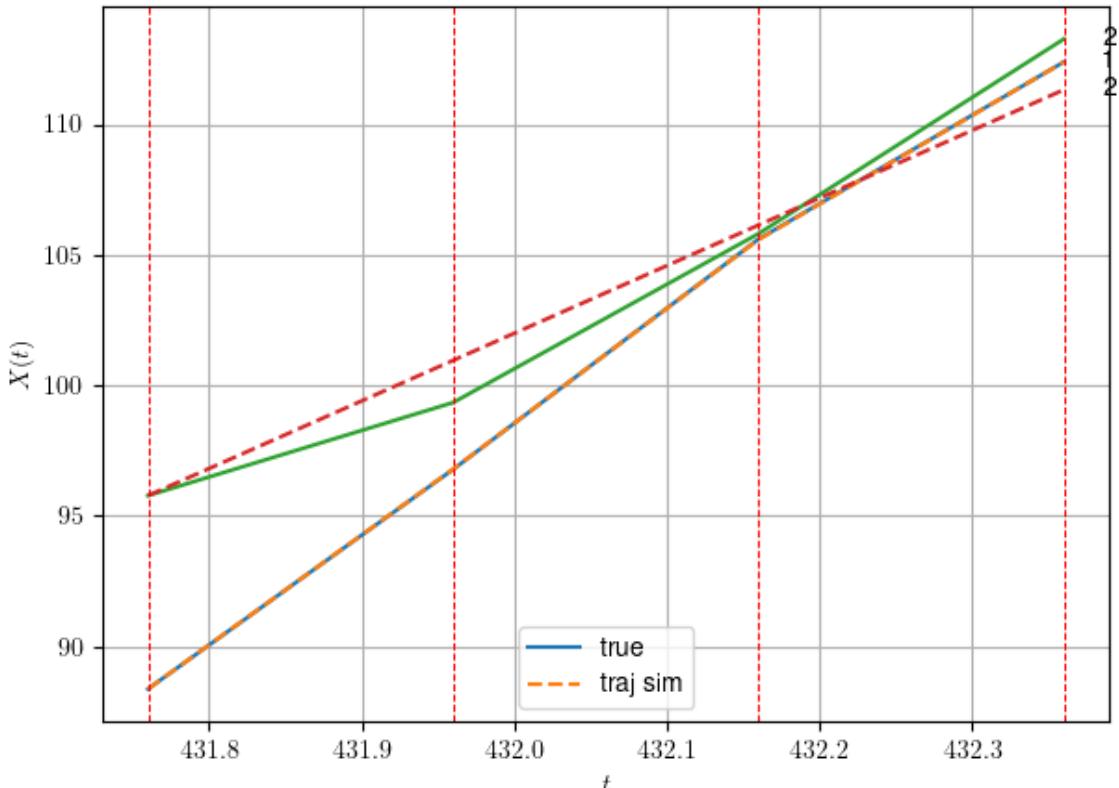
- Time interval n.1: [431.96, 432.16]

```
* y_true: [44.06855704]
* v_ann: [43.90974426269531, 25.896889333920278]
```

```
- Time interval n.2: [432.16, 432.36]
* y_true: [33.89770032]
* v_ann: [33.98923873901367, 25.896889333920278]
```

```
* err= 0.8116738323777913
* Learning rate NN = 0.0005904899444431067
* diff = 7 147001790774876e-05
```

df n. 3 – Scene n. 22, at it = 500



For scene 22/90

```
* use LR_NN=0.001 with err=2.0324627221370255 at it=24
* v0_scn_mean = 26.061013760533488
* MAE = 0.8116738323777913
```

df n.3, scene n.23/90

We have 7 time intervals inside [436.16, 437.56]

```
- Time interval n.0: [436.16, 436.36]
* y_true: [28.38049676]
* v_ann: [30.91811752319336, 32.92393930276282]
```

```
- Time interval n.1: [436.36, 436.56]
```

```
* y_true: [31.10077619]
* v_ann: [32.08610534667969, 32.92393930276282]
```

```
-----  
-----  
- Time interval n.2: [436.56, 436.76]  
* y_true: [33.35116865]  
* v_ann: [31.15888214111328, 32.92393930276282]
```

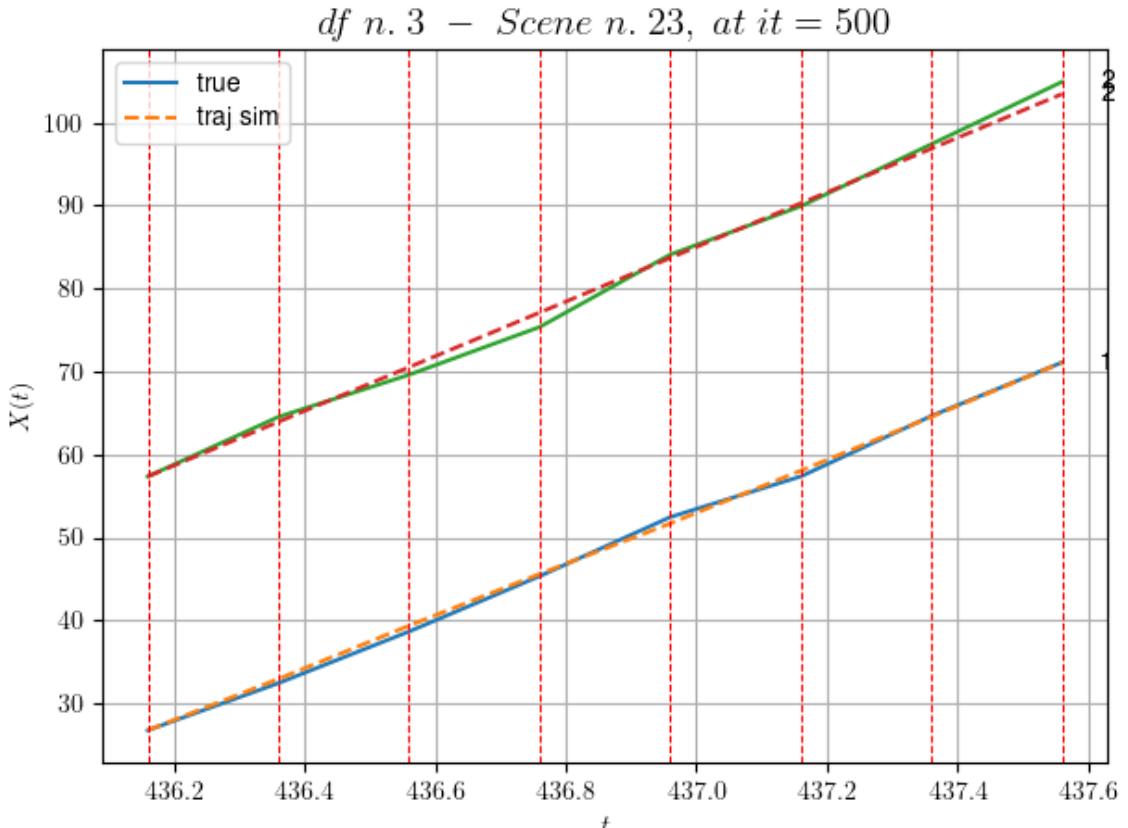
```
-----  
-----  
- Time interval n.3: [436.76, 436.96]  
* y_true: [35.59162813]  
* v_ann: [30.461280822753906, 32.92393930276282]
```

```
-----  
-----  
- Time interval n.4: [436.96, 437.16]  
* y_true: [24.54147266]  
* v_ann: [31.80554962158203, 32.92393930276282]
```

```
-----  
-----  
- Time interval n.5: [437.16, 437.36]  
* y_true: [36.46262809]  
* v_ann: [32.44892120361328, 32.92393930276282]
```

```
-----  
-----  
- Time interval n.6: [437.36, 437.56]  
* y_true: [32.2428709]  
* v_ann: [32.65651321411133, 32.92393930276282]
```

```
-----  
-----  
* err= 0.5541722114730138  
* Learning rate NN = 2.541864660088322e-06  
* diff = 6.638691885463288e-05
```



For scene 23/90

- * use LR_NN=1e-05 with err=4.053916242090926 at it=24
- * v0_scn_mean = 32.80698173067545
- * MAE = 0.5540488783426502

df n.3, scene n.24/90

We have 3 time intervals inside [438.16, 438.76]

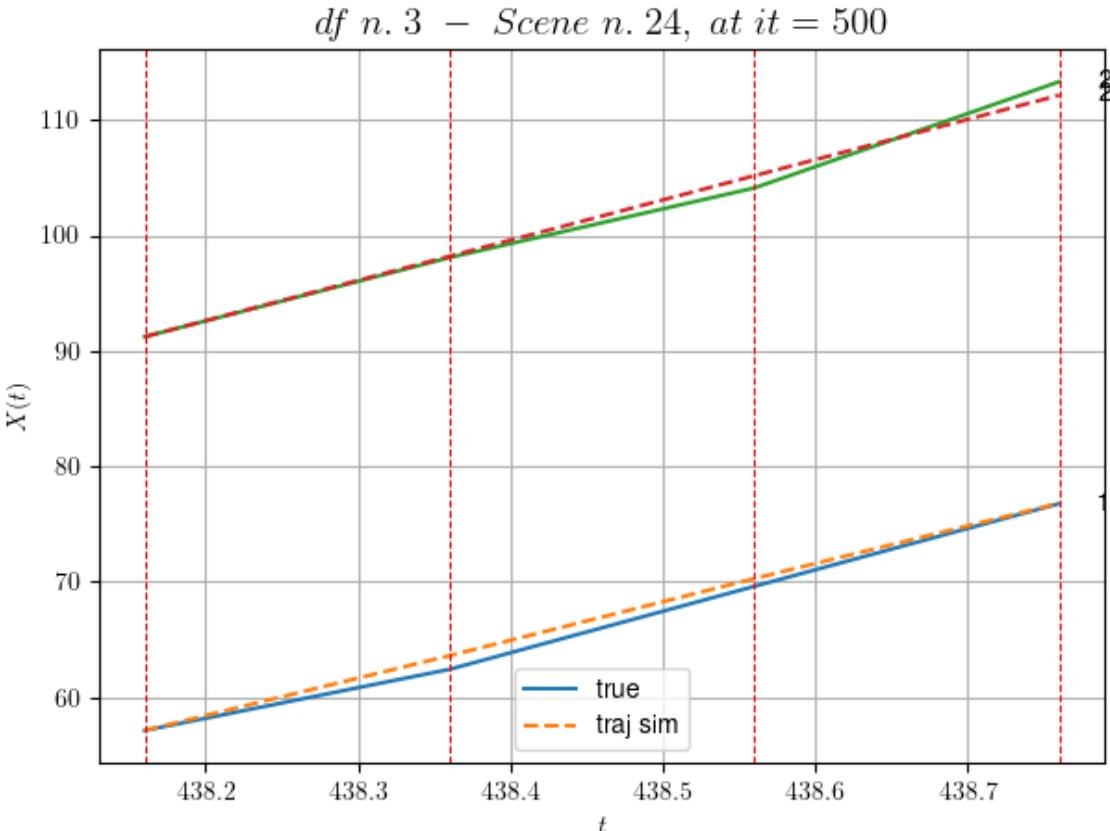
- Time interval n.0: [438.16, 438.36]
 - * y_true: [26.48183539]
 - * v_ann: [32.3981819152832, 34.86837809331598]

- Time interval n.1: [438.36, 438.56]
 - * y_true: [35.94307189]
 - * v_ann: [33.393775939941406, 34.86837809331598]

- Time interval n.2: [438.56, 438.76]
 - * y_true: [35.82358849]
 - * v_ann: [32.59830093383789, 34.86837809331598]

- * err= 0.5452696050494055
- * Learning rate NN = 5.9048988987342454e-06

* diff = 2.68602106117712e-05



For scene 24/90

```
* use LR_NN=1e-05 with err=2.5453811643511224 at it=24
* v0_scn_mean = 34.67364296962015
* MAE = 0.5439273297817679
```

df n.3, scene n.25/90

We have 10 time intervals inside [464.56, 466.56]

- Time interval n.0: [464.56, 464.76]
 - * y_true: [27.69098082]
 - * v_ann: [27.744197845458984, 24.498602704880945]

- Time interval n.1: [464.76, 464.96]
 - * y_true: [18.42077628]
 - * v_ann: [27.983867645263672, 24.498602704880945]

- Time interval n.2: [464.96, 465.16]
 - * y_true: [33.36180608]
 - * v_ann: [27.716552734375, 24.498602704880945]

- Time interval n.3: [465.16, 465.36]
 - * y_true: [30.0319773]

* v_ann: [26.24891471862793, 24.498602704880945]

- Time interval n.4: [465.36, 465.56]
* y_true: [28.782318]
* v_ann: [27.057287216186523, 24.498602704880945]

- Time interval n.5: [465.56, 465.76]
* y_true: [28.59272475]
* v_ann: [27.552518844604492, 24.498602704880945]

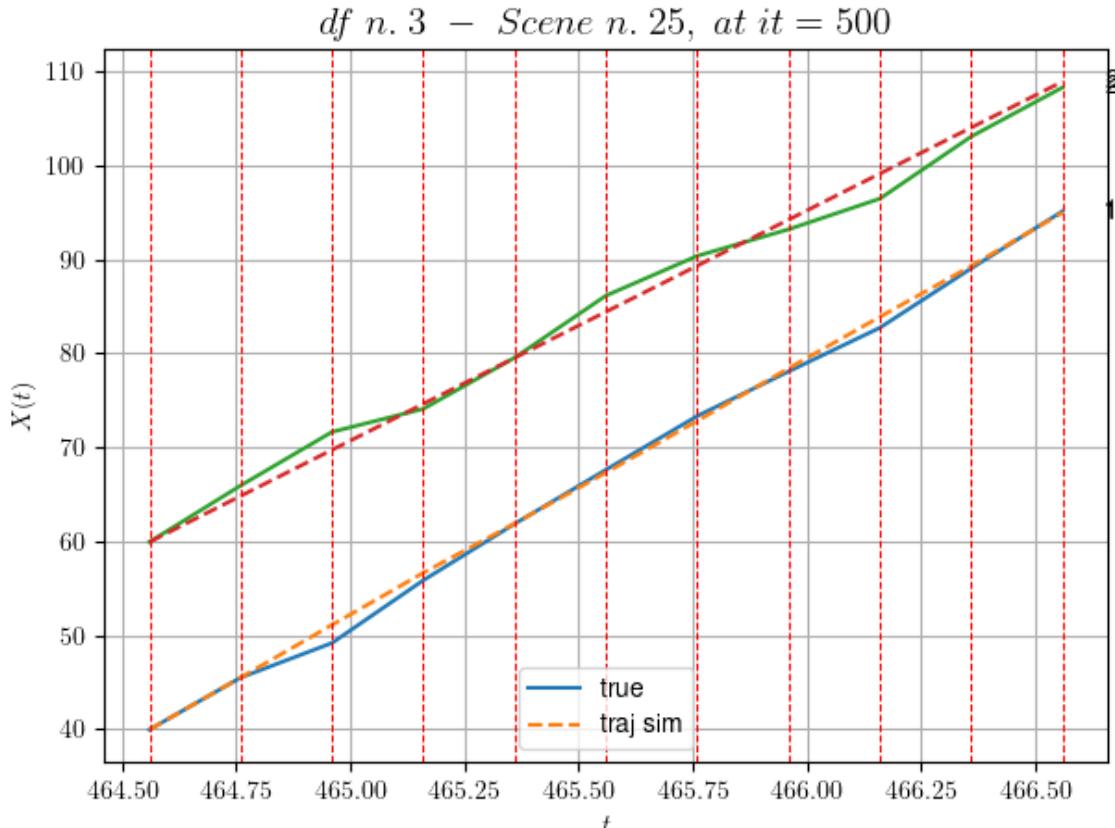
- Time interval n.6: [465.76, 465.96]
* y_true: [23.70259195]
* v_ann: [27.92299461364746, 24.498602704880945]

- Time interval n.7: [465.96, 466.16]
* y_true: [23.26288454]
* v_ann: [27.40896224975586, 24.498602704880945]

- Time interval n.8: [466.16, 466.36]
* y_true: [31.61450449]
* v_ann: [27.09200668334961, 24.498602704880945]

- Time interval n.9: [466.36, 466.56]
* y_true: [30.37492519]
* v_ann: [28.405620574951172, 24.498602704880945]

* err= 1.1301826714188714
* Learning rate NN = 6.754255446139723e-05
* diff = 0.02122550064023465



For scene 25/90

- * use LR_NN=0.0005 with err=26.001441090964683 at it=24
- * v0_scn_mean = 24.7186585966437
- * MAE = 1.1301826714188714

df n.3, scene n.26/90

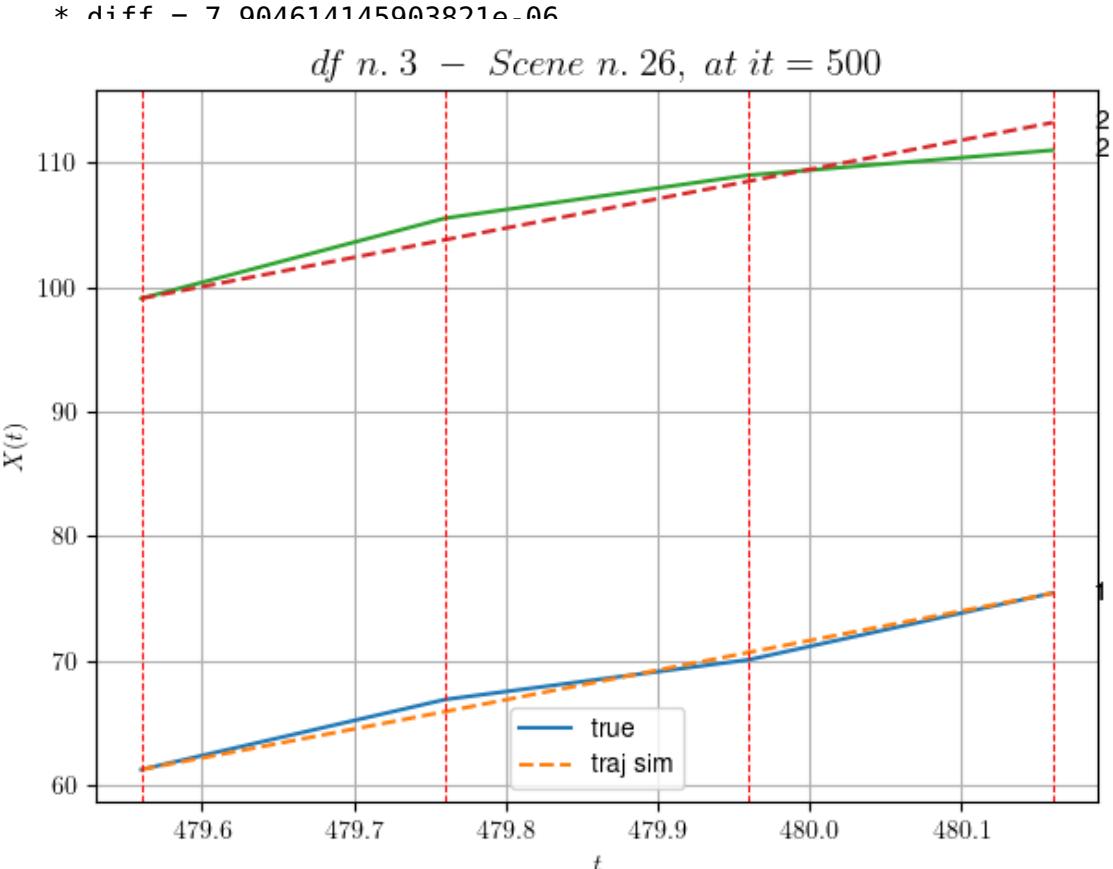
We have 3 time intervals inside [479.56, 480.16]

- Time interval n.0: [479.56, 479.76]
 - * y_true: [28.13211047]
 - * v_ann: [23.27066421508789, 23.543200777567318]

- Time interval n.1: [479.76, 479.96]
 - * y_true: [15.98145013]
 - * v_ann: [23.796581268310547, 23.543200777567318]

- Time interval n.2: [479.96, 480.16]
 - * y_true: [26.79272857]
 - * v_ann: [23.742172241210938, 23.543200777567318]

- * err= 1.184409443295737
- * Learning rate NN = 5.9048988987342454e-06



For scene 26/90

* use LR_NN=1e-05 with err=5.39026622220388 at it=24
 * v0_scn_mean = 23.80147274641542
 * MAE = 1.184409443295737

df n.3, scene n.27/90

We have 5 time intervals inside [486.56, 487.56]

- Time interval n.0: [486.56, 486.76]
 * y_true: [22.56167732]
 * v_ann: [20.188091278076172, 25.858119431708875]

- Time interval n.1: [486.76, 486.96]
 * y_true: [23.21197857]
 * v_ann: [20.927268981933594, 25.858119431708875]

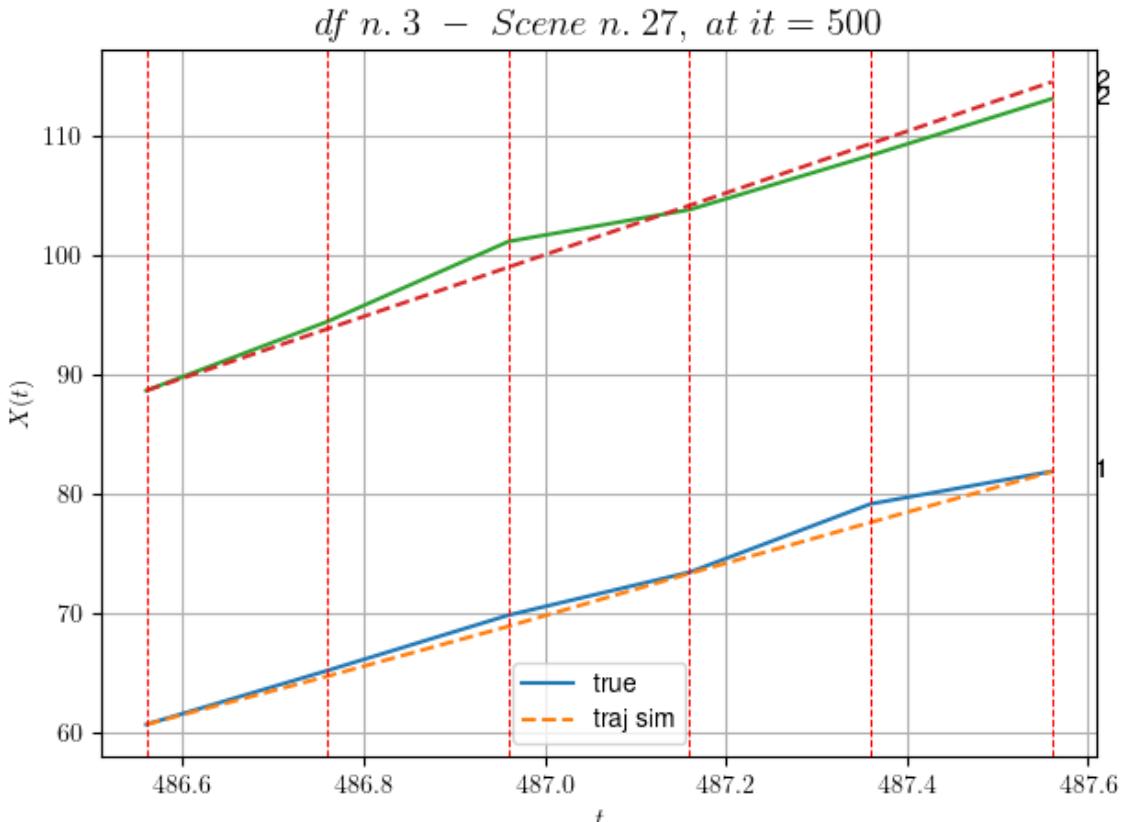
- Time interval n.2: [486.96, 487.16]
 * y_true: [17.98171719]
 * v_ann: [22.121273040771484, 25.858119431708875]

- Time interval n.3: [487.16, 487.36]
 * y_true: [28.62315801]

```
* v_ann: [21.39920425415039, 25.858119431708875]
```

```
- Time interval n.4: [487.36, 487.56]
* y_true: [13.60161023]
* v_ann: [21.177112579345703, 25.858119431708875]
```

```
* err= 0.9655658878148716
* Learning rate NN = 1.9371018424862996e-05
* diff = 0.003241744410916958
```



For scene 27/90

```
* use LR_NN=5e-05 with err=5.19800826343886 at it=24
* v0_scn_mean = 26.023794654409095
* MAE = 0.9593137932065903
```

df n.3, scene n.28/90

```
We have 6 time intervals inside [538.76,539.96]
```

```
- Time interval n.0: [538.76, 538.96]
* y_true: [20.99100466]
* v_ann: [20.11029815673828, 28.5657340698475]
```

```
- Time interval n.1: [538.96, 539.16]
* y_true: [24.97142443]
```

```
* v_ann: [22.070106506347656, 28.5657340698475]
```

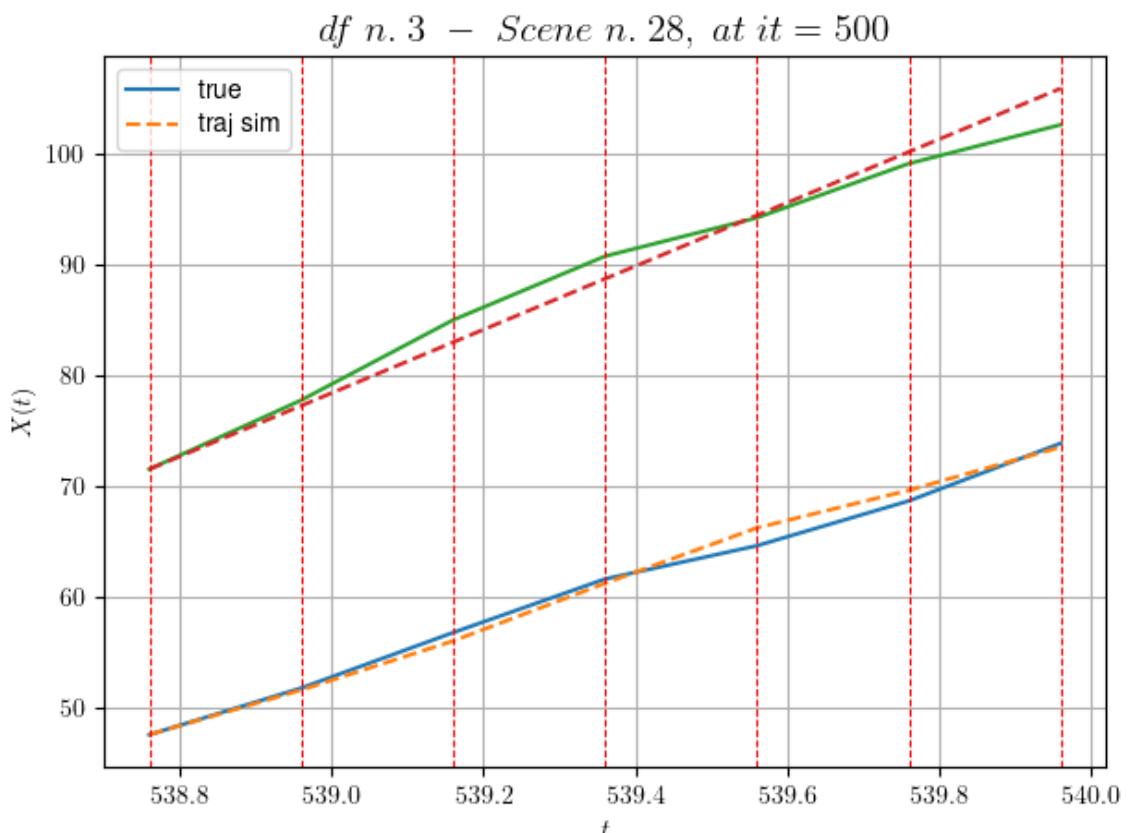
```
- Time interval n.2: [539.16, 539.36]
* y_true: [24.1116136]
* v_ann: [25.950336456298828, 28.5657340698475]
```

```
- Time interval n.3: [539.36, 539.56]
* y_true: [14.99112189]
* v_ann: [24.963428497314453, 28.5657340698475]
```

```
- Time interval n.4: [539.56, 539.76]
* y_true: [20.18175812]
* v_ann: [16.920873641967773, 28.5657340698475]
```

```
- Time interval n.5: [539.76, 539.96]
* y_true: [25.92252017]
* v_ann: [19.479291915893555, 28.5657340698475]
```

```
* err= 1.7571589595090698
* Learning rate NN = 0.00031381050939671695
* diff = 0.01635887259507407
```



For scene 28/90

* use LR_NN=0.001 with err=2.7522544588510973 at it=24

```
* vθ_scn_mean = 28.623104707041843  
* MAE = 1.6315349306665565
```

```
=====
```

df n.3, scene n.29/90

```
=====
```

We have 5 time intervals inside [544.16, 545.16]

- Time interval n.0: [544.16, 544.36]
 - * y_true: [11.03044025]
 - * v_ann: [20.59719467163086, 26.245021293271215]

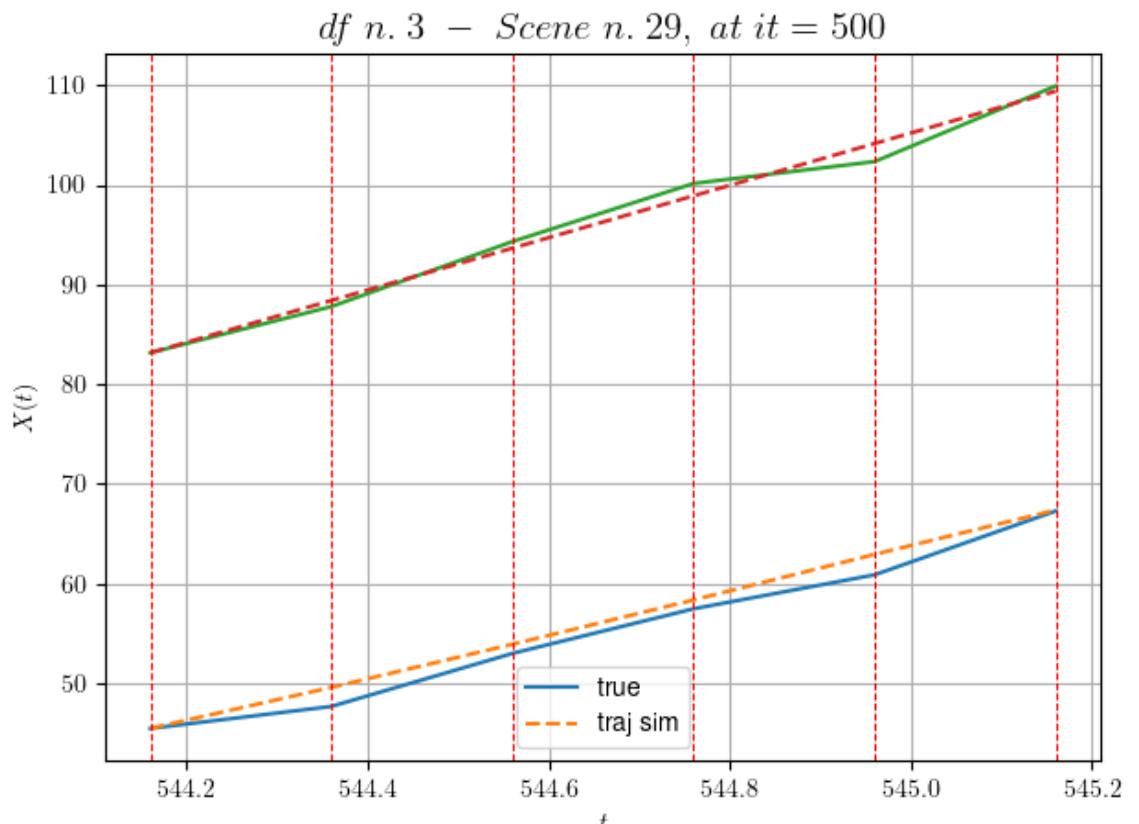
- Time interval n.1: [544.36, 544.56]
 - * y_true: [26.59442737]
 - * v_ann: [21.609128952026367, 26.245021293271215]

- Time interval n.2: [544.56, 544.76]
 - * y_true: [22.38126049]
 - * v_ann: [22.236413955688477, 26.245021293271215]

- Time interval n.3: [544.76, 544.96]
 - * y_true: [17.05115247]
 - * v_ann: [22.86602210998535, 26.245021293271215]

- Time interval n.4: [544.96, 545.16]
 - * y_true: [32.00259919]
 - * v_ann: [22.216596603393555, 26.245021293271215]

```
* err= 1.2839923569647325  
* Learning rate NN = 3.874203684972599e-06  
* diff = 0.0010086288729458381
```



```
For scene 29/90
* use LR_NN=1e-05 with err=3.8985612980197994 at it=24
* v0_scn_mean = 26.395220441510645
* MAE = 1.280461619541883
```

```
=====
=====
```

```
df n.3, scene n.30/90
```

```
=====
=====
```

```
We have 3 time intervals inside [563.76,564.36]
```

```
- Time interval n.0: [563.76, 563.96]
  * y_true: [25.25123233]
  * v_ann: [19.0657958984375, 27.431374274162934]
```

```
-----
-----
```

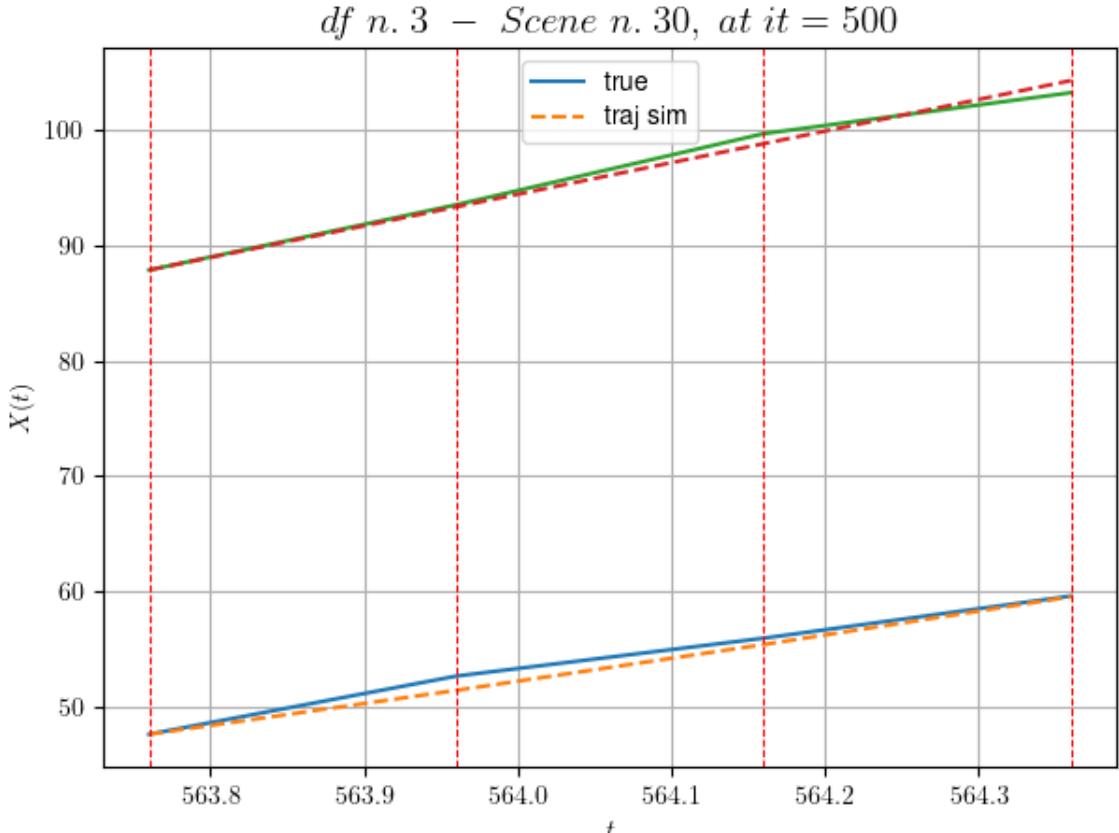
```
- Time interval n.1: [563.96, 564.16]
  * y_true: [16.45094022]
  * v_ann: [19.891014099121094, 27.431374274162934]
```

```
-----
-----
```

```
- Time interval n.2: [564.16, 564.36]
  * y_true: [18.30118347]
  * v_ann: [20.732728958129883, 27.431374274162934]
```

```
-----
-----
```

```
* err= 0.4680888785238321
* Learning rate NN = 2.952449540316593e-05
* diff = 1.379707488524673e-05
```



For scene 30/90

```
* use LR_NN=5e-05 with err=1.1253416149626545 at it=24
* v0_scn_mean = 27.534119303177626
* MAE = 0.46497761865384624
```

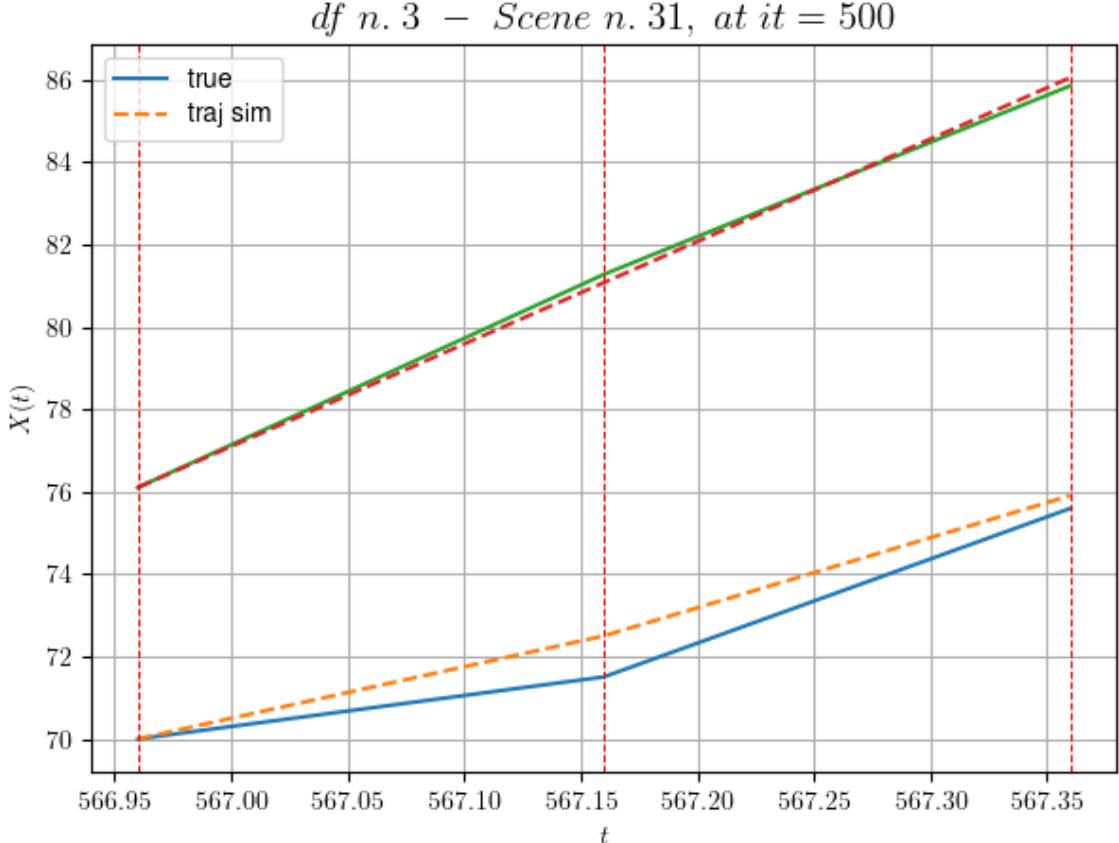
df n.3, scene n.31/90

We have 2 time intervals inside [566.96, 567.36]

- Time interval n.0: [566.96, 567.16]
 - * y_true: [7.53069511]
 - * v_ann: [12.508302688598633, 24.86641811764766]

- Time interval n.1: [567.16, 567.36]
 - * y_true: [20.43212573]
 - * v_ann: [17.010780334472656, 24.86641811764766]

```
* err= 0.19456826340743
* Learning rate NN = 0.00036449998151510954
* diff = 0.0006450029821085945
```



For scene 31/90

- * use LR_NN=0.0005 with err=1.0862170030686413 at it=24
- * v0_scn_mean = 25.071761392907963
- * MAE = 0.19349936376307453

df n.3, scene n.32/90

We have 4 time intervals inside [573.76, 574.56]

- Time interval n.0: [573.76, 573.96]
 - * y_true: [17.20183898]
 - * v_ann: [24.484270095825195, 29.329399819602802]

- Time interval n.1: [573.96, 574.16]
 - * y_true: [34.7042468]
 - * v_ann: [27.168537139892578, 29.329399819602802]

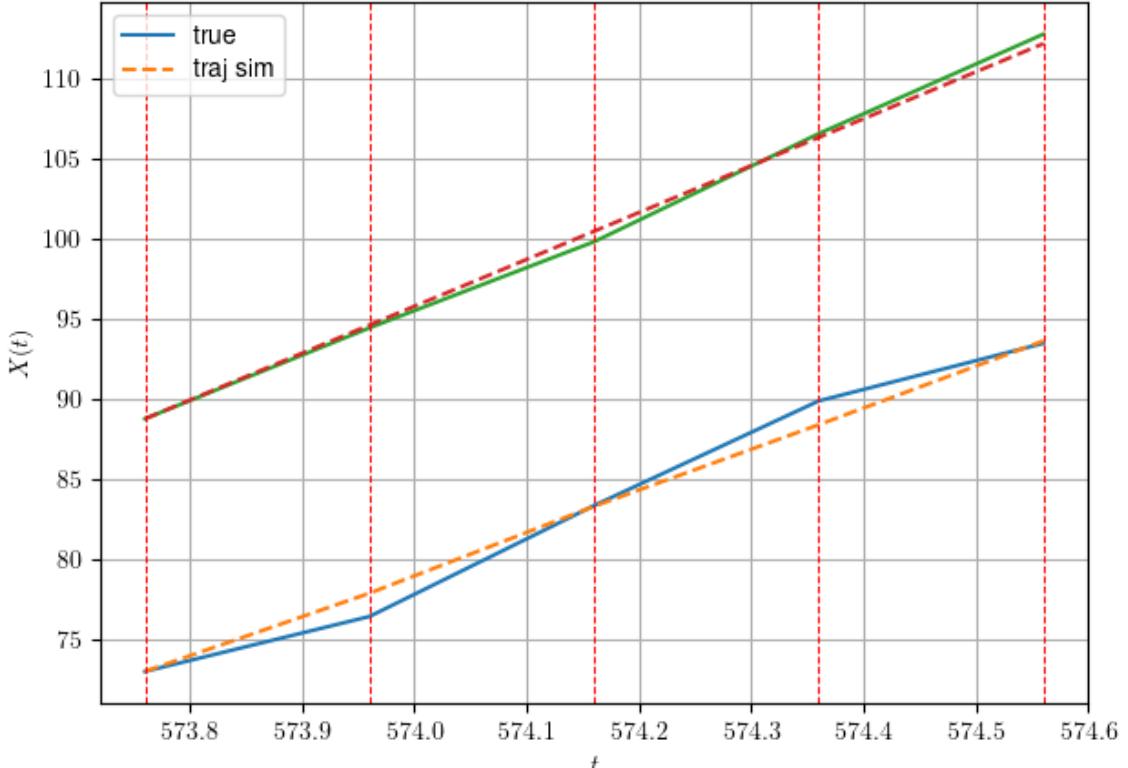
- Time interval n.2: [574.16, 574.36]
 - * y_true: [32.70470322]
 - * v_ann: [25.50650405883789, 29.329399819602802]

- Time interval n.3: [574.36, 574.56]
 - * y_true: [18.00289984]

* v_ann: [26.21280288696289, 29.329399819602802]

* err= 0.5240108863635677
 * Learning rate NN = 2.3914839403005317e-05
 * diff = 0.0004087630160073408

df n. 3 — Scene n. 32, at it = 500

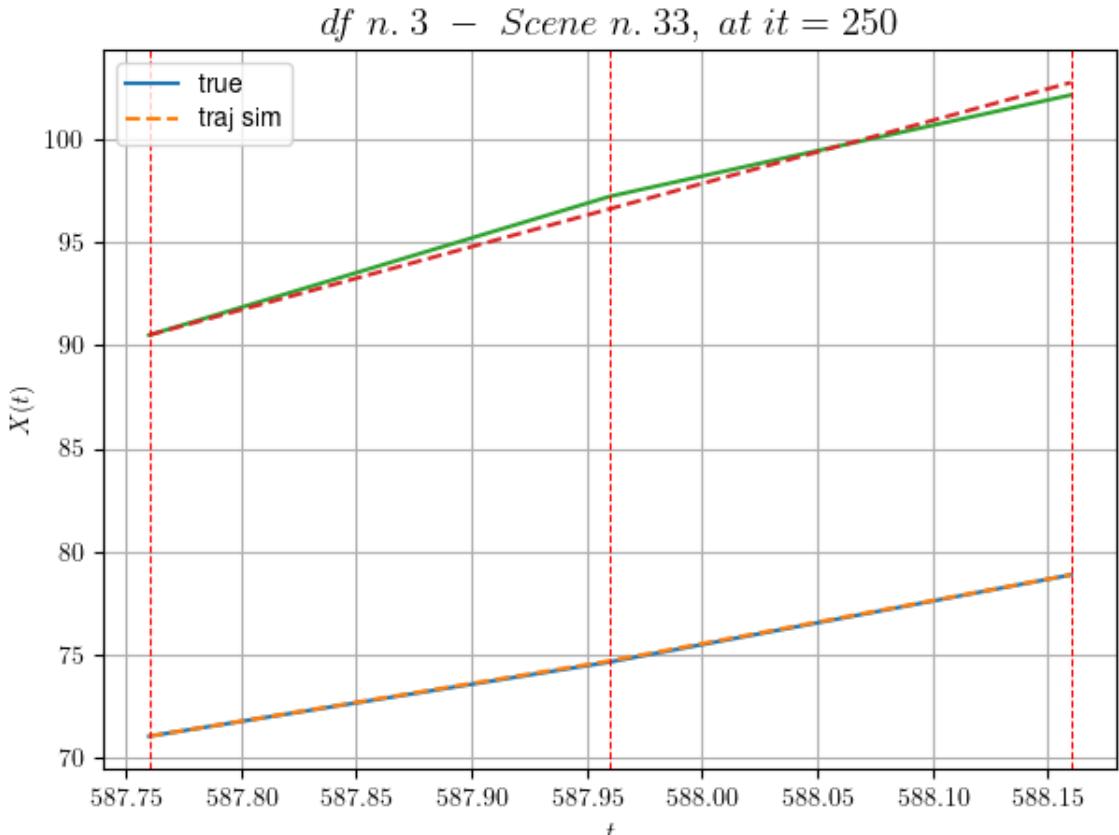


For scene 32/90

* use LR_NN=5e-05 with err=0.5475106073755089 at it=24
 * v0_scn_mean = 29.356223826811686
 * MAE = 0.5240108863635677

df n.3, scene n.33/90

We have 2 time intervals inside [587.76,588.16]
 * err= 0.1221329153512662
 * Learning rate NN = 8.999999408842996e-05
 * diff = 7.72511963453848e-07



For scene 33/90

```
* use LR_NN=0.0001 with err=0.10955030379282832 at it=24
* v0_scn_mean = 30.602903404219937
* MAE = 0.1111187489371928
```

df n.3, scene n.34/90

We have 7 time intervals inside [590.36, 591.76]

- Time interval n.0: [590.36, 590.56]
 - * y_true: [11.65068678]
 - * v_ann: [11.762402534484863, 19.035476639426445]

- Time interval n.1: [590.56, 590.76]
 - * y_true: [9.35059372]
 - * v_ann: [9.180537223815918, 19.035476639426445]

- Time interval n.2: [590.76, 590.96]
 - * y_true: [6.3504254]
 - * v_ann: [6.876607894897461, 19.035476639426445]

- Time interval n.3: [590.96, 591.16]
 - * y_true: [16.8512193]

```
* v_ann: [11.524535179138184, 19.035476639426445]
```

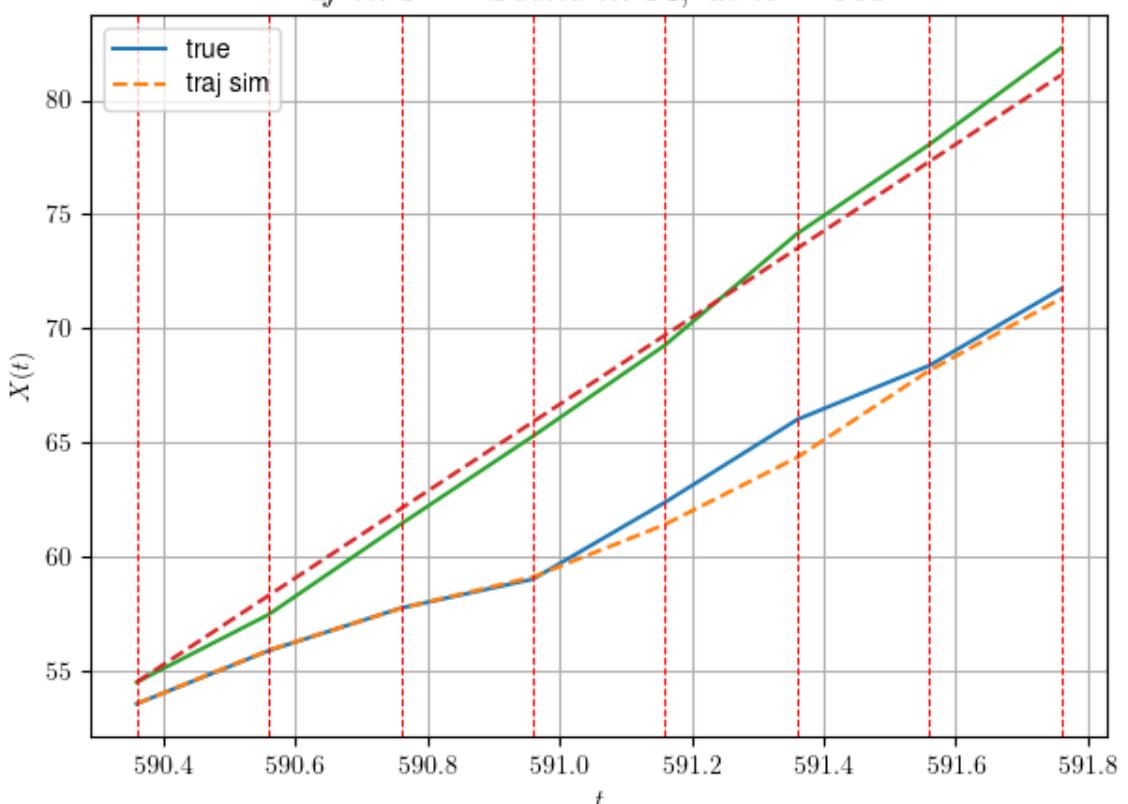
```
- Time interval n.4: [591.16, 591.36]
* y_true: [18.15146703]
* v_ann: [14.70779037475586, 19.035476639426445]
```

```
- Time interval n.5: [591.36, 591.56]
* y_true: [11.85104821]
* v_ann: [19.064651489257812, 19.035476639426445]
```

```
- Time interval n.6: [591.56, 591.76]
* y_true: [16.85161923]
* v_ann: [15.848130226135254, 19.035476639426445]
```

```
* err= 0.5034641821936734
* Learning rate NN = 0.0012709323782473803
* diff = 0.00461607346002868
```

df n. 3 – Scene n. 34, at it = 500



For scene 34/90

```
* use LR_NN=0.005 with err=39.94736068742084 at it=24
* v0_scn_mean = 19.47405757376577
* MAE = 0.3443145446738245
```

```
df n.3, scene n.35/90
```

We have 3 time intervals inside [16.16, 16.76]

- Time interval n.0: [16.16, 16.36]
 - * y_true: [27.36596872 40.6089382]
 - * v_ann: [25.13397979736328, 19.389118194580078, 3

9.227281786833124]

- Time interval n.1: [16.36, 16.56]
 - * y_true: [22.16572117 32.62072047]
 - * v_ann: [36.100257873535156, 28.521377563476562, 3

9.227281786833124]

- Time interval n.2: [16.56, 16.76]
 - * y_true: [24.04131334 24.91936545]
 - * v_ann: [32.776580810546875, 20.932453155517578, 3

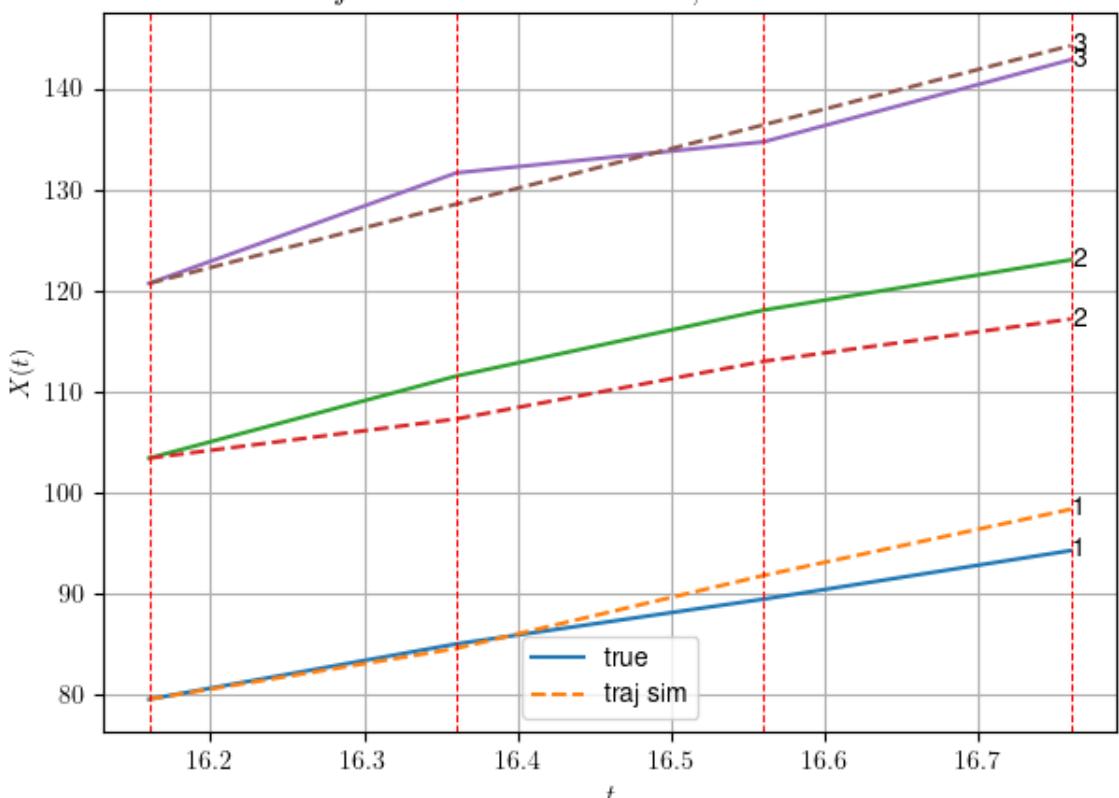
9.227281786833124]

* err= 9.563271335343515

* Learning rate NN = 0.0002952449722215533

* diff = 0.06724520487029473

df n. 3 – Scene n. 35, at it = 500



For scene 35/90

* use LR_NN=0.0005 with err=13.277385881553522 at it=24

* v0_scn_mean = 38.67364529390814

* MAE = 9.563271335343515

```
=====
=====
```

df n.3, scene n.36/90

```
=====
=====
```

We have 2 time intervals inside [17.56,17.96]

- Time interval n.0: [17.56, 17.76]

- * y_true: [26.87631442 28.75240293]

- * v_ann: [19.879880905151367, 41.39515686035156, 3
7.34160894188896]

- Time interval n.1: [17.76, 17.96]

- * y_true: [26.32655772 34.05345458]

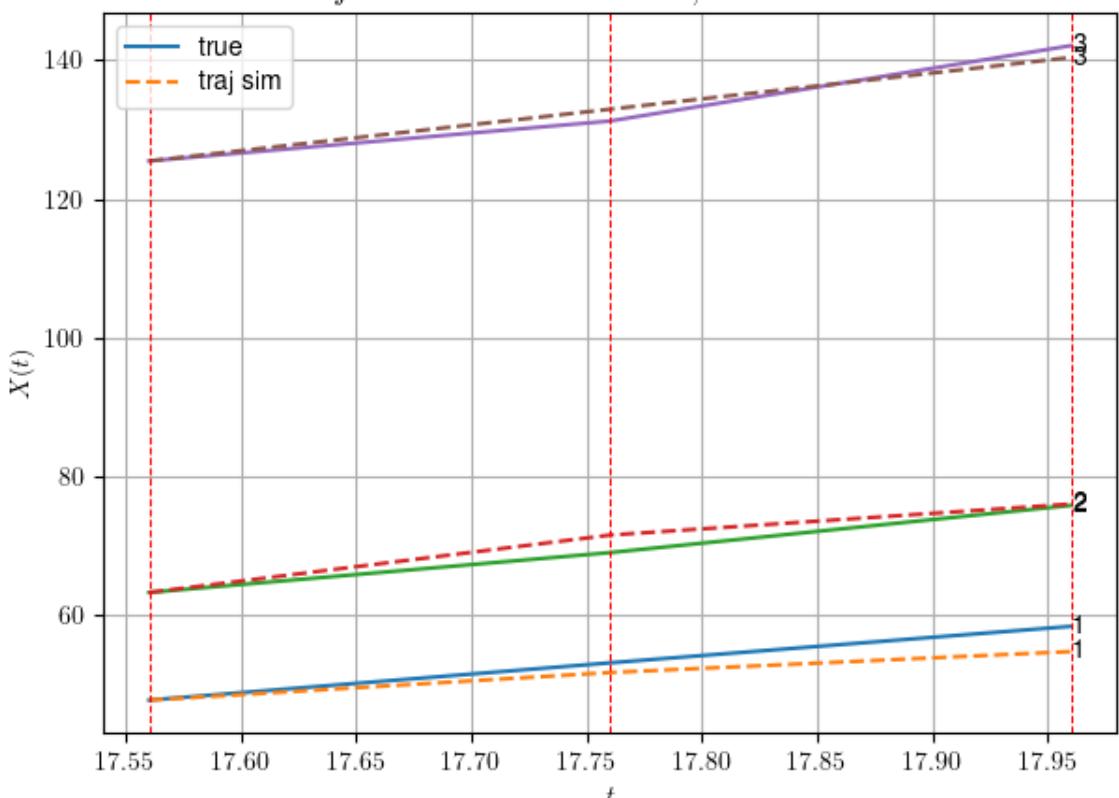
- * v_ann: [15.145286560058594, 22.371177673339844, 3
7.34160894188896]

- * err= 3.0458791087138213

- * Learning rate NN = 7.289998757187277e-05

- * diff = 0.000002240104200043

df n. 3 – Scene n. 36, at it = 500



For scene 36/90

- * use LR_NN=0.0001 with err=9.727836770219815 at it=24

- * v0_scn_mean = 36.90111273499794

- * MAE = 3.0458791087138213

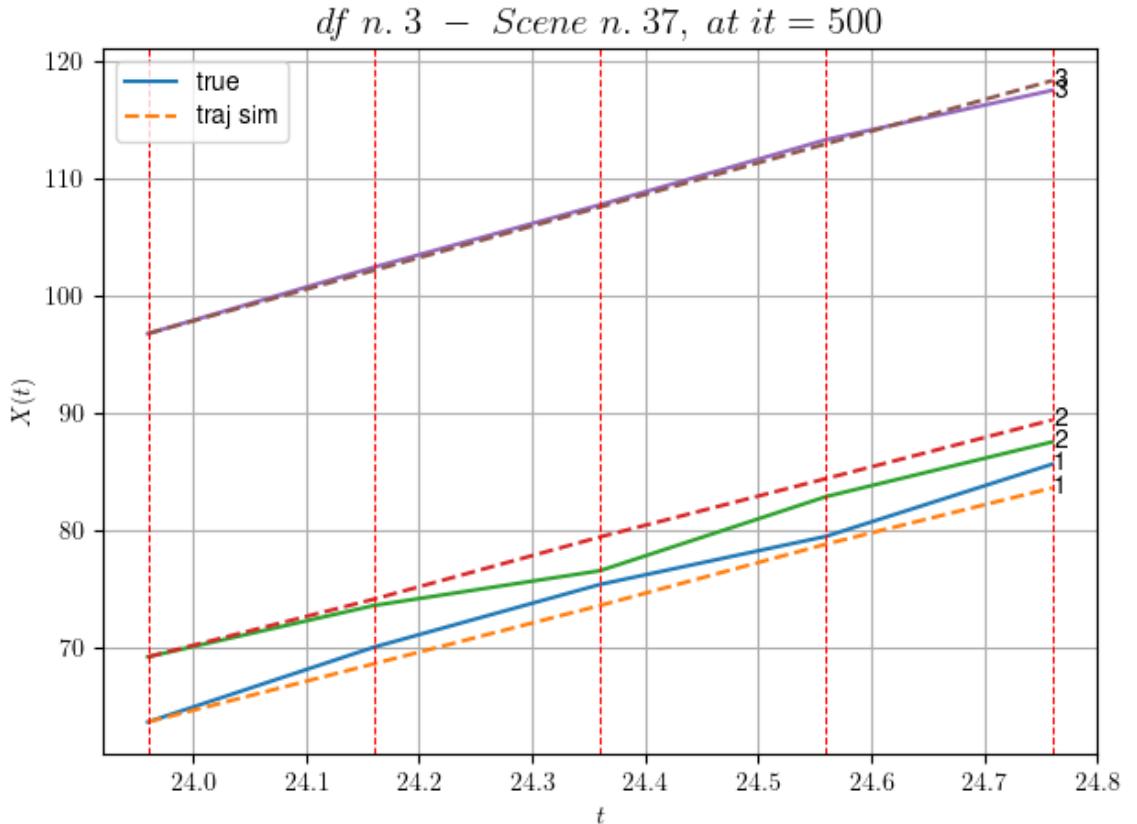
```
df n.3, scene n.37/90
=====
=====
    We have 4 time intervals inside [23.96,24.76]
        - Time interval n.0: [23.96, 24.16]
            * y_true: [31.9527567 21.95230333]
            * v_ann: [24.85759925842285, 24.653783798217773, 2
7.016664353697227]

-----
        - Time interval n.1: [24.16, 24.36]
            * y_true: [26.79271708 14.85171745]
            * v_ann: [24.904327392578125, 26.574756622314453, 2
7.016664353697227]

-----
        - Time interval n.2: [24.36, 24.56]
            * y_true: [20.5424093 31.65411216]
            * v_ann: [26.202354431152344, 24.930601119995117, 2
7.016664353697227]

-----
        - Time interval n.3: [24.56, 24.76]
            * y_true: [30.8240747 23.35345154]
            * v_ann: [24.001081466674805, 25.0340518951416, 27.
016664353697227]

-----
        * err= 1.6827943261524325
        * Learning rate NN = 0.000239148415857926
        * diff = 0.0179795144909356
```



For scene 37/90

- * use LR_NN=0.0005 with err=39.94849518937526 at it=24
 - * v0_scn_mean = 27.195664358530063
 - * MAE = 1.6827943261524325
-
-

df n.3, scene n.38/90

We have 4 time intervals inside [42.96, 43.76]

- Time interval n.0: [42.96, 43.16]
 - * y_true: [34.44093898 36.40531345]
 - * v_ann: [25.022531509399414, 24.9213809967041, 27.350673440922375]
-
-

- Time interval n.1: [43.16, 43.36]
 - * y_true: [27.09071898 44.10770887]
 - * v_ann: [34.70939254760742, 32.27939987182617, 27.350673440922375]
-
-

- Time interval n.2: [43.36, 43.56]
 - * y_true: [24.51583897 25.2301032]
 - * v_ann: [38.999263763427734, 29.19840431213379, 27.350673440922375]
-
-

```

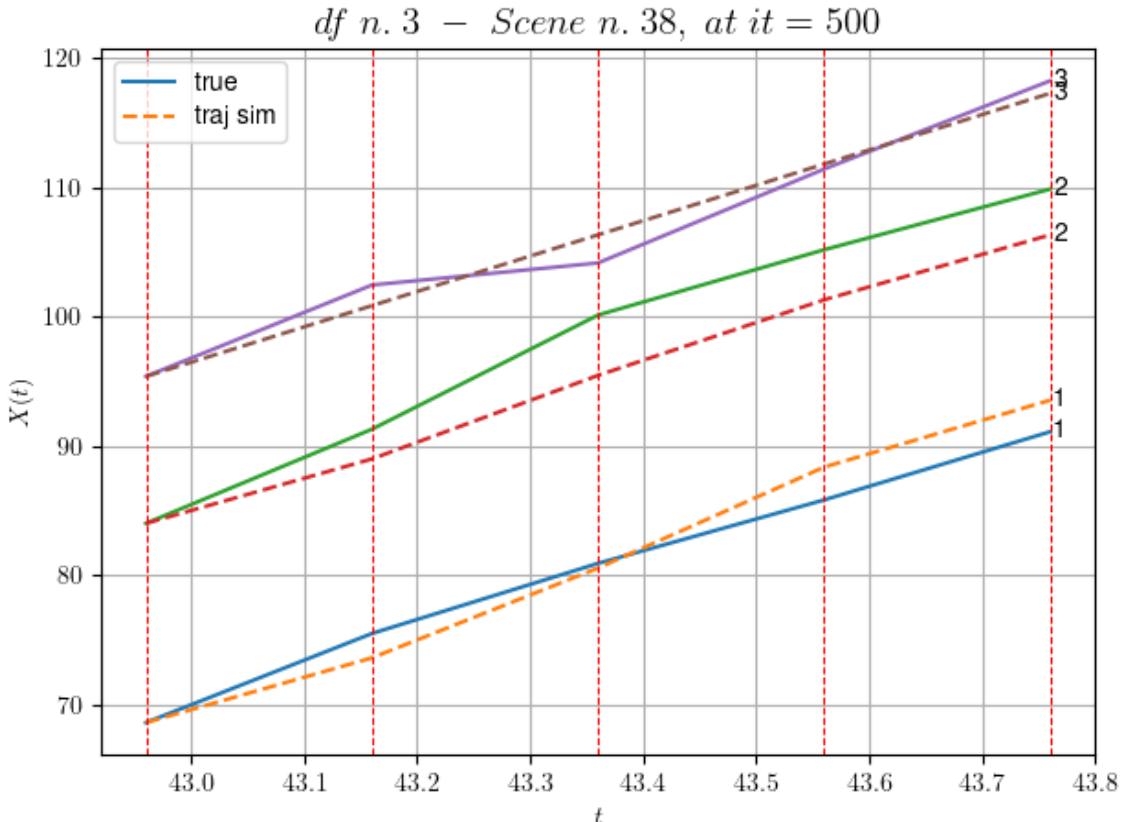
    - Time interval n.3: [43.56, 43.76]
      * y_true: [26.35394512 23.45522926]
      * v_ann: [25.861865997314453, 25.098865509033203, 2
    7.350673440922375]

```

```

    * err= 5.260783603671736
    * Learning rate NN = 0.000478296831715852
    * diff = 0.14067919298980414

```



For scene 38/90

```

    * use LR_NN=0.001 with err=22.953228027952687 at it=24
    * v0_scn_mean = 27.50963291551805
    * MAE = 4.257260619787362

```

df n.3, scene n.39/90

We have 2 time intervals inside [61.76, 62.16]

```

    - Time interval n.0: [61.76, 61.96]
      * y_true: [28.79377133 7.10177762]
      * v_ann: [31.597328186035156, 29.883281707763672, 2
    7.83009041676711]

```

```

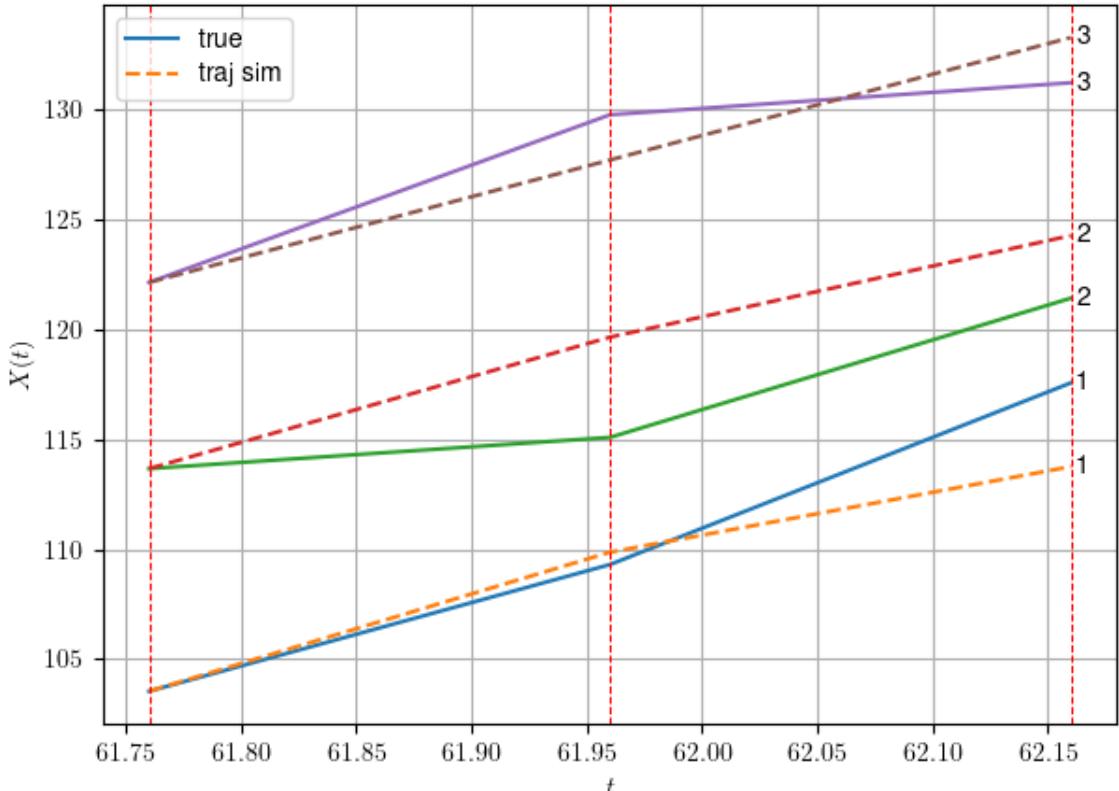
    - Time interval n.1: [61.96, 62.16]
      * y_true: [41.29768472 31.64601894]
      * v_ann: [19.456527709960938, 23.095996856689453, 2

```

7.83009041676711]

```
* err= 5.791249686026287
* Learning rate NN = 0.0007289999630302191
* diff = 0 002997834173082328
```

df n. 3 – Scene n. 39, at it = 500



For scene 39/90

```
* use LR_NN=0.001 with err=7.2477262611271405 at it=24
* v0_scn_mean = 27.960284894336937
* MAE = 5.575861289580641
```

df n.3, scene n.40/90

We have 2 time intervals inside [63.76, 64.16]

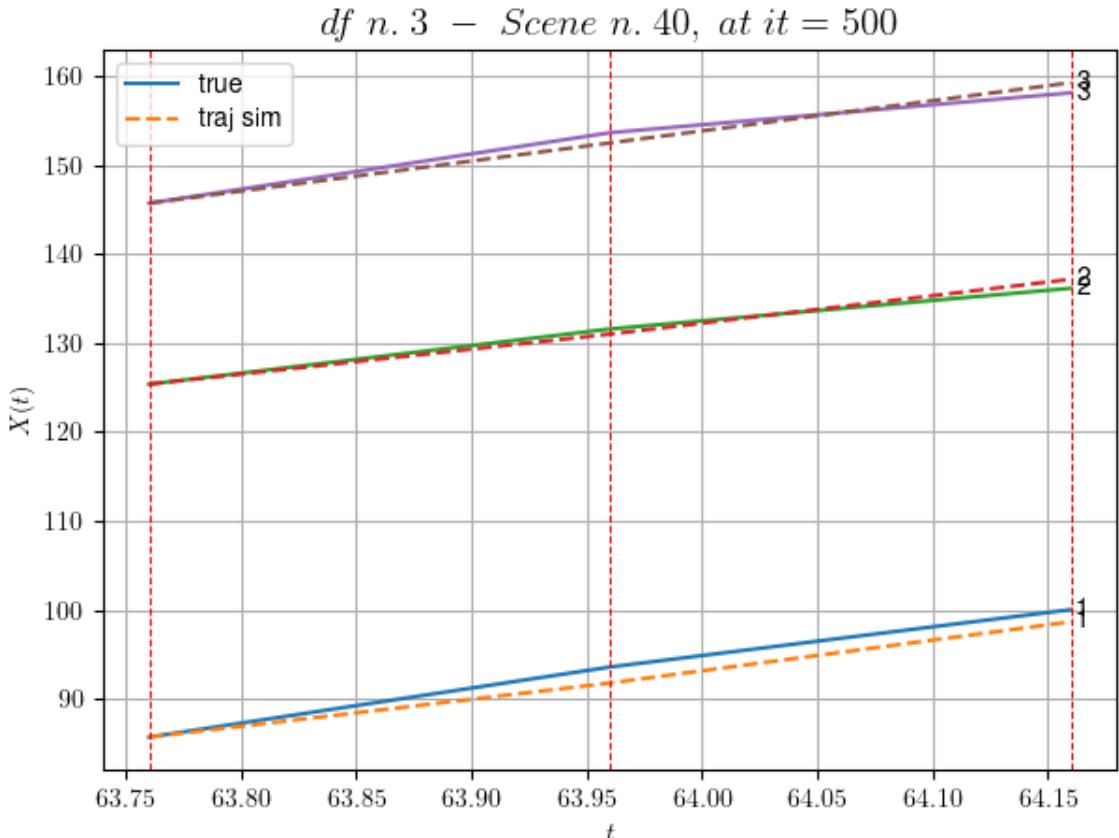
- Time interval n.0: [63.76, 63.96]
 - * y_true: [39.33120973 30.97229006]
 - * v_ann: [30.35283088684082, 28.073347091674805, 3

3.839882674381016]

- Time interval n.1: [63.96, 64.16]
 - * y_true: [32.2308074 22.86038312]
 - * v_ann: [34.41352081298828, 30.811267852783203, 3

3.839882674381016]

```
* err= 1.0058547711907655
* Learning rate NN = 7.289998757187277e-05
* diff = 0.020659366243615973
```



For scene 40/90

```
* use LR_NN=0.0001 with err=1.916940515761623 at it=24
* v0_scn_mean = 33.60948988632081
* MAE = 0.566836274111738
```

df n.3, scene n.41/90

We have 3 time intervals inside [67.16, 67.76]

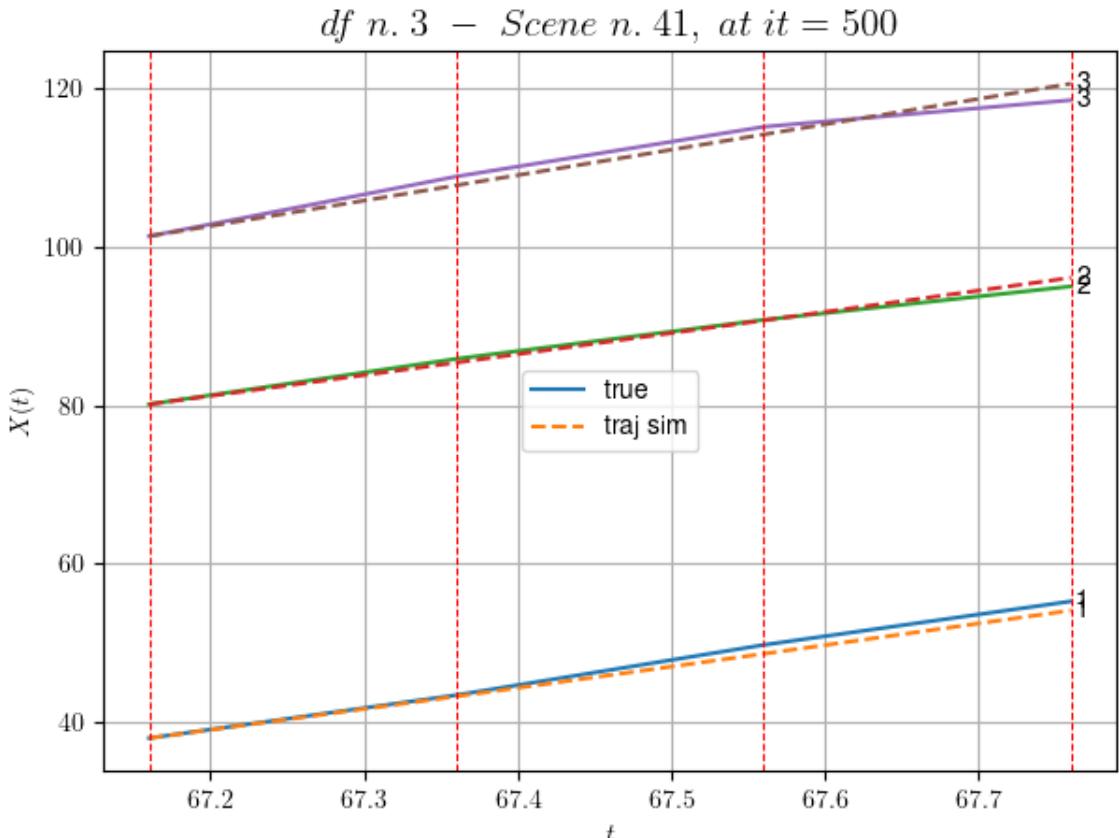
- Time interval n.0: [67.16, 67.36]
 - * y_true: [27.17586615 28.72375126]
 - * v_ann: [26.334321975708008, 26.32349967956543, 32.139321542456486]

- Time interval n.1: [67.36, 67.56]
 - * y_true: [31.70635664 24.62373081]
 - * v_ann: [26.942798614501953, 26.66099739074707, 32.139321542456486]

- Time interval n.2: [67.56, 67.76]
 - * y_true: [27.5714436 21.15852297]
 - * v_ann: [27.41947555419922, 26.981081008911133, 32.139321542456486]

2.139321542456486]

- * err= 0.8819417727632377
- * Learning rate NN = 2.952449540316593e-05
- * diff = 0.0027187448105309153



For scene 41/90

- * use LR_NN=5e-05 with err=4.122696138170074 at it=24
- * v0_scn_mean = 32.01096234595987
- * MAE = 0.7876583180346032

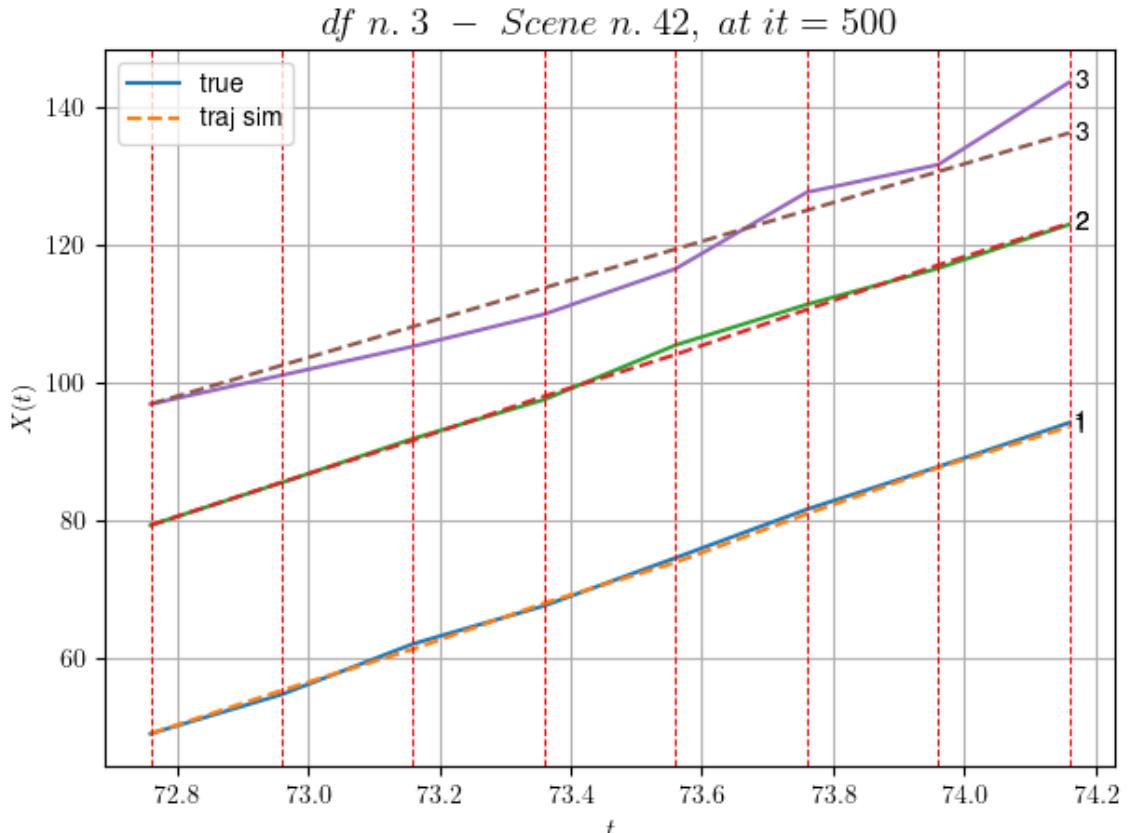
df n.3, scene n.42/90

We have 7 time intervals inside [72.76, 74.16]

- Time interval n.0: [72.76, 72.96]
 - * y_true: [28.501496 30.93407752]
 - * v_ann: [31.31614112854004, 31.132266998291016, 28.121240263140272]

- Time interval n.1: [72.96, 73.16]
 - * y_true: [36.65243351 31.9148258]
 - * v_ann: [30.01332664489746, 30.39602279663086, 28.121240263140272]

```
-----  
      - Time interval n.2: [73.16, 73.36]  
        * y_true: [27.70226144 28.33497935]  
        * v_ann: [33.376399993896484, 32.07877731323242, 2  
8.121240263140272]  
  
-----  
      - Time interval n.3: [73.36, 73.56]  
        * y_true: [34.7534691 39.55781959]  
        * v_ann: [29.596206665039062, 30.26188087463379, 2  
8.121240263140272]  
  
-----  
      - Time interval n.4: [73.56, 73.76]  
        * y_true: [35.21414381 29.47666535]  
        * v_ann: [35.203758239746094, 32.59697723388672, 2  
8.121240263140272]  
  
-----  
      - Time interval n.5: [73.76, 73.96]  
        * y_true: [30.89430642 26.20657024]  
        * v_ann: [33.44746017456055, 32.357460021972656, 2  
8.121240263140272]  
  
-----  
      - Time interval n.6: [73.96, 74.16]  
        * y_true: [32.05509091 31.88895952]  
        * v_ann: [29.828866958618164, 30.279130935668945, 2  
8.121240263140272]  
  
-----  
* err= 4.182899897420357  
* Learning rate NN = 0.00012709324073512107  
* diff = 0.0018696069058643516
```



For scene 42/90

- * use LR_NN=0.0005 with err=49.447300768920734 at it=24
- * v0_scn_mean = 28.233965762999507
- * MAE = 4.177960780732205

df n.3, scene n.43/90

We have 3 time intervals inside [82.16, 82.76]

- Time interval n.0: [82.16, 82.36]
 - * y_true: [30.54468004 23.04450554]
 - * v_ann: [27.344722747802734, 29.500999450683594, 27.5502374137073]

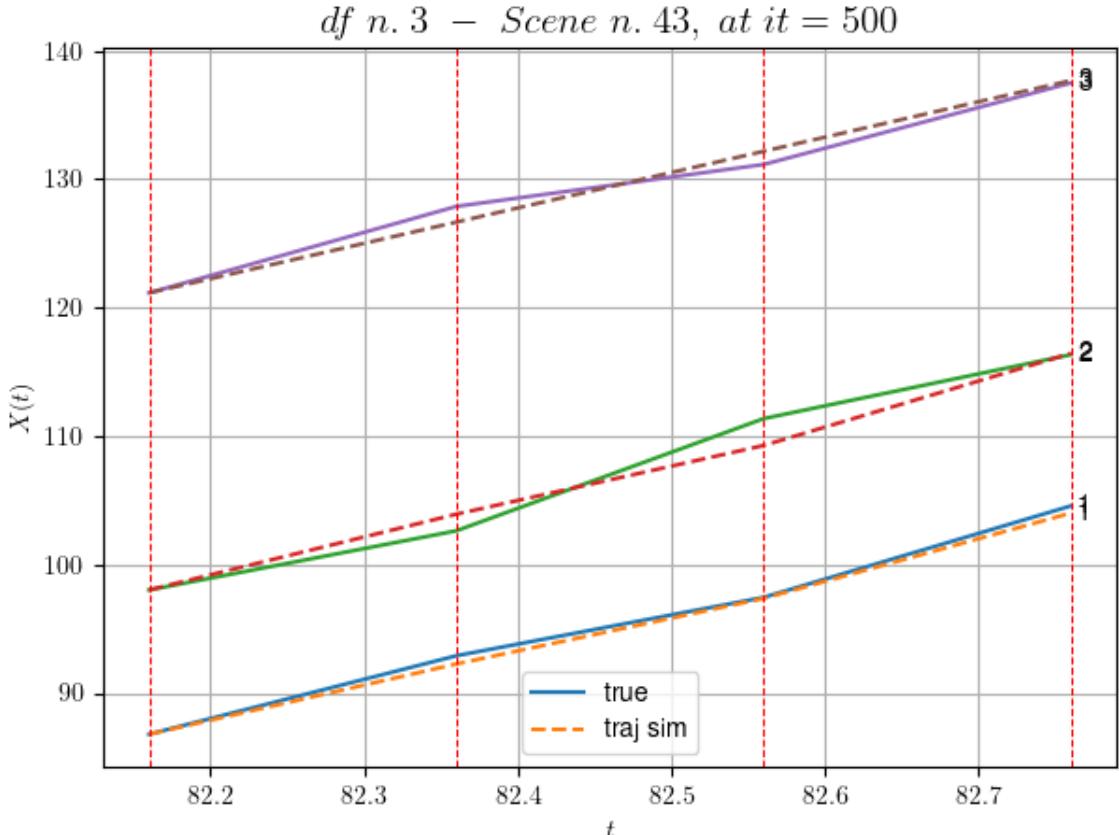
- Time interval n.1: [82.36, 82.56]
 - * y_true: [22.71402344 43.65971655]
 - * v_ann: [25.503032684326172, 26.740310668945312, 27.5502374137073]

- Time interval n.2: [82.56, 82.76]
 - * y_true: [35.61686857 24.88594316]
 - * v_ann: [33.254066467285156, 35.870784759521484, 27.5502374137073]

```

* err= 0.7798569067203159
* Learning rate NN = 0.0005904899444431067
* diff = 0.0008803154210859088

```



For scene 43/90

```

* use LR_NN=0.001 with err=7.17790962719829 at it=24
* v0_scn_mean = 27.69722305889584
* MAE = 0.7785181364353378

```

df n.3, scene n.44/90

We have 3 time intervals inside [86.16, 86.76]

- Time interval n.0: [86.16, 86.36]
 - * y_true: [27.89181051 25.45740923]
 - * v_ann: [25.412193298339844, 29.98464584350586, 3 5.76473661345416]

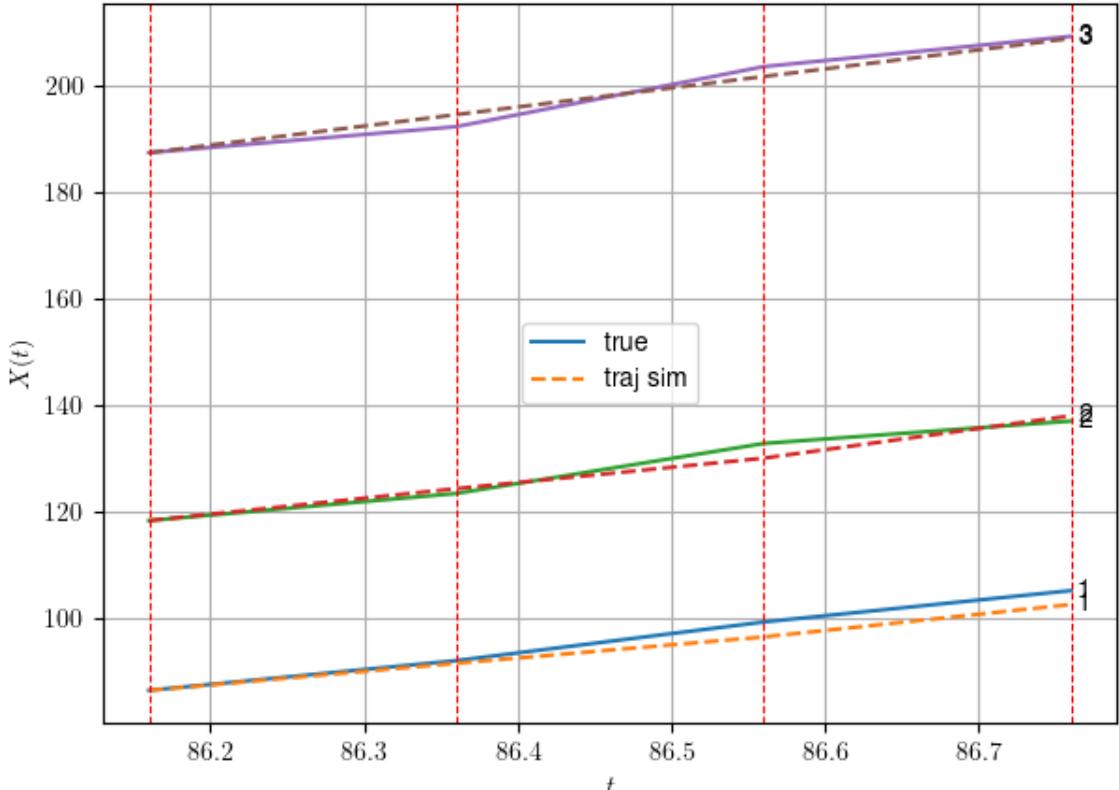
- Time interval n.1: [86.36, 86.56]
 - * y_true: [36.25627338 46.92477715]
 - * v_ann: [24.70686149597168, 28.604623794555664, 3 5.76473661345416]

- Time interval n.2: [86.56, 86.76]
 - * y_true: [29.50579063 21.07714474]

```
* v_ann: [30.472869873046875, 39.838478088378906, 3
5.76473661345416]
```

```
* err= 2.757072236940884
* Learning rate NN = 5.904899080633186e-05
* diff = 0.02026077411206222
```

df n. 3 – Scene n. 44, at it = 500



For scene 44/90

```
* use LR_NN=0.0001 with err=13.935949138631344 at it=24
* v0_scn_mean = 35.418852675471065
* MAE = 2.757072236940884
```

df n.3, scene n.45/90

We have 5 time intervals inside [130.96, 131.96]

- Time interval n.0: [130.96, 131.16]
 - * y_true: [15.85249734 39.95916833]
 - * v_ann: [32.4823112487793, 31.13381004333496, 31.75233788512402]

- Time interval n.1: [131.16, 131.36]
 - * y_true: [19.2732587 14.0236874]
 - * v_ann: [34.285823822021484, 29.329801559448242, 31.75233788512402]

```

-----  

    - Time interval n.2: [131.36, 131.56]  

      * y_true: [20.77382027 41.90201833]  

      * v_ann: [33.072265625, 29.786685943603516, 31.7523  

3788512402]  

-----  

    - Time interval n.3: [131.56, 131.76]  

      * y_true: [36.06757222 59.75967406]  

      * v_ann: [34.66661834716797, 30.612468719482422, 3  

1.75233788512402]  

-----  

    - Time interval n.4: [131.76, 131.96]  

      * y_true: [33.71775213 41.23564164]  

      * v_ann: [37.59493637084961, 28.995891571044922, 3  

1.75233788512402]  

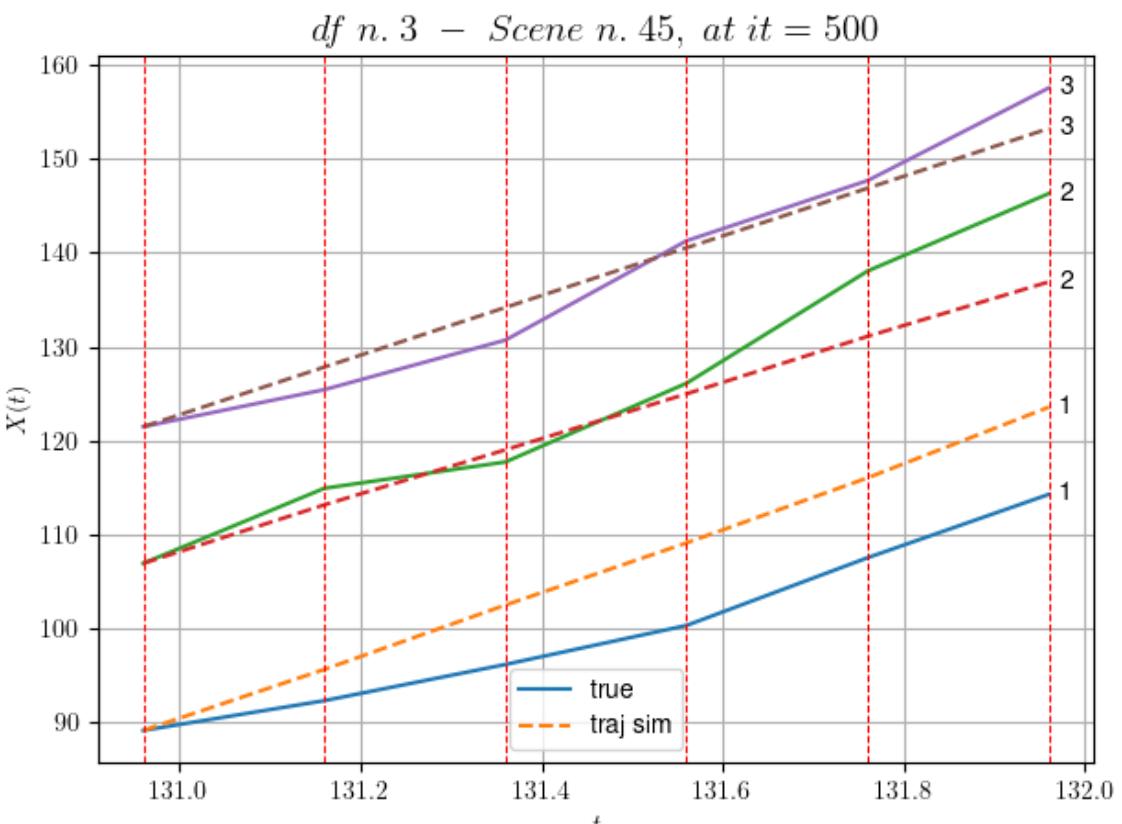
-----  

* err= 25.975372250127787  

* Learning rate NN = 1.9371018424862996e-05  

* diff = 0.031310152643712286

```



For scene 45/90
* use LR_NN=5e-05 with err=57.503253424978176 at it=24
* v0_scn_mean = 31.647197690692813
* MAE = 24.84501965502314

```
df n.3, scene n.46/90
```

```
=====
=====
```

We have 12 time intervals inside [139.16, 141.56]

- Time interval n.0: [139.16, 139.36]
 - * y_true: [22.50033849 31.62238978]
 - * v_ann: [27.085773468017578, 28.634078979492188, 28.144630567258798]
- Time interval n.1: [139.36, 139.56]
 - * y_true: [29.90063418 17.15160439]
 - * v_ann: [27.48358726501465, 26.841522216796875, 28.144630567258798]
- Time interval n.2: [139.56, 139.76]
 - * y_true: [27.10078793 37.57385655]
 - * v_ann: [26.405155181884766, 27.70886993408203, 28.144630567258798]
- Time interval n.3: [139.76, 139.96]
 - * y_true: [25.40095052 21.65266443]
 - * v_ann: [27.558923721313477, 29.46512222290039, 28.144630567258798]
- Time interval n.4: [139.96, 140.16]
 - * y_true: [21.40097883 32.03445568]
 - * v_ann: [26.836576461791992, 26.25149917602539, 28.144630567258798]
- Time interval n.5: [140.16, 140.36]
 - * y_true: [21.7011754 31.91506312]
 - * v_ann: [27.34541893005371, 26.20705795288086, 28.144630567258798]
- Time interval n.6: [140.36, 140.56]
 - * y_true: [30.50199276 23.65435061]
 - * v_ann: [27.79032325744629, 24.33196449279785, 28.144630567258798]
- Time interval n.7: [140.56, 140.76]
 - * y_true: [27.90220498 42.04863469]
 - * v_ann: [27.458375930786133, 29.472633361816406, 28.144630567258798]

```

-----  

    - Time interval n.8: [140.76, 140.96]  

      * y_true: [45.30444602 33.92792147]  

      * v_ann: [29.092817306518555, 30.597599029541016, 2  

8.144630567258798]  

-----  

    - Time interval n.9: [140.96, 141.16]  

      * y_true: [22.85268623 11.9131035 ]  

      * v_ann: [29.949357986450195, 23.476787567138672, 2  

8.144630567258798]  

-----  

    - Time interval n.10: [141.16, 141.36]  

      * y_true: [15.65202595 30.01833255]  

      * v_ann: [27.87525749206543, 28.721364974975586, 2  

8.144630567258798]  

-----  

    - Time interval n.11: [141.36, 141.56]  

      * y_true: [27.55395105 33.94025545]  

      * v_ann: [27.9019832611084, 29.956832885742188, 28.  

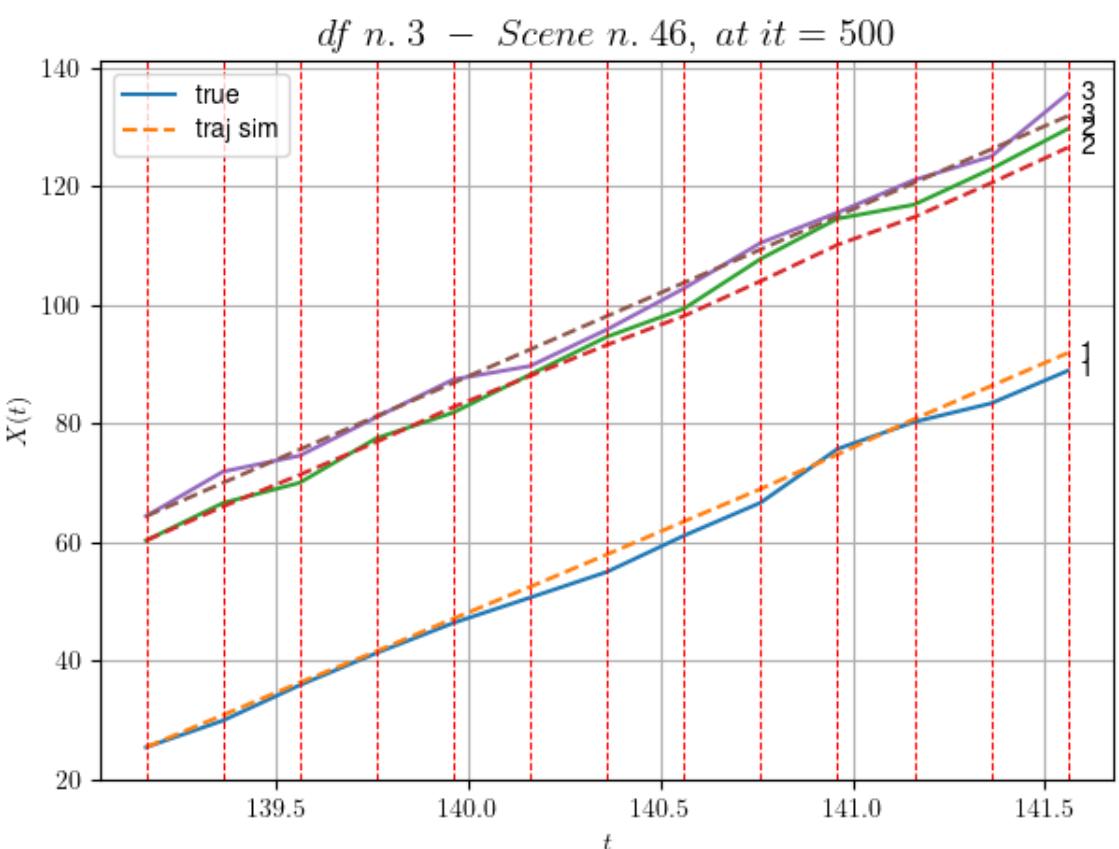
144630567258798]  

-----  

* err= 3.596360211618735  

* Learning rate NN = 4.431466732057743e-05

```



For scene 46/90

* use LR_NN=0.0005 with err=352.78941833269135 at it=24

```
* vθ_scn_mean = 28.255952649921557
* MAE = 2.9516796398597247
```

```
=====
```

df n.3, scene n.47/90

```
=====
```

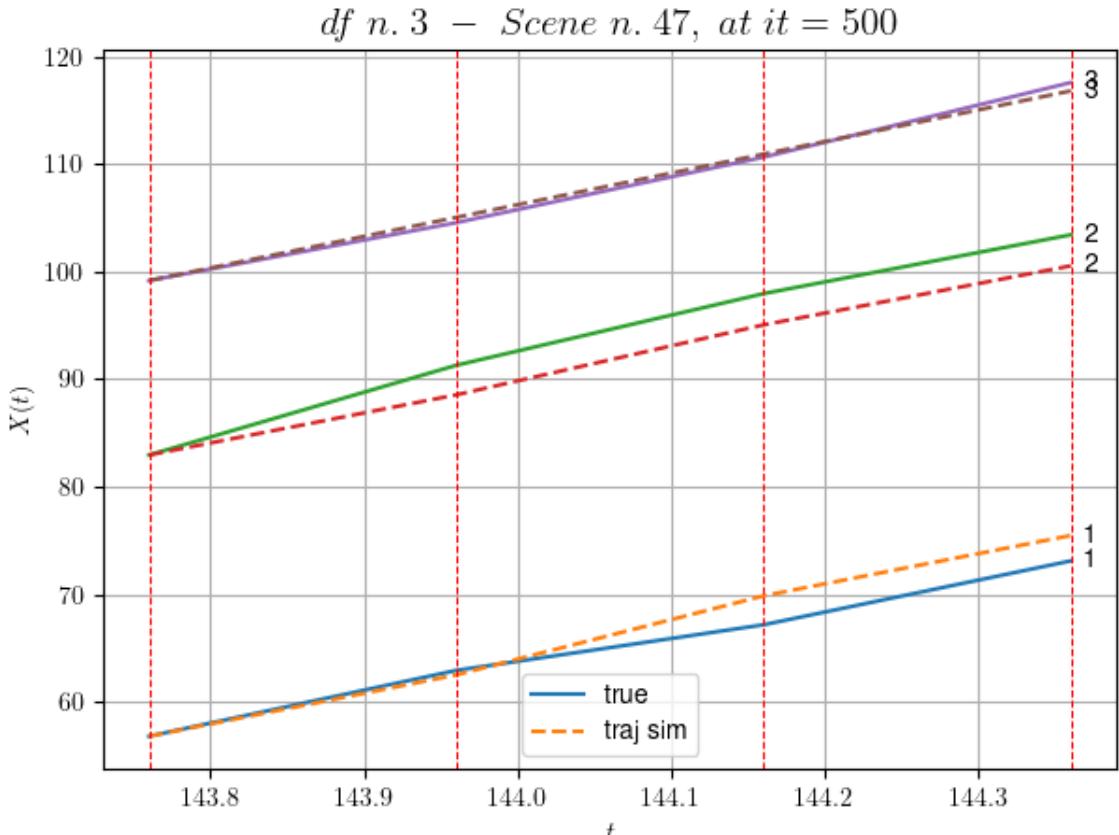
We have 3 time intervals inside [143.76,144.36]

- Time interval n.0: [143.76, 143.96]
 - * y_true: [30.62207823 41.7261053]
 - * v_ann: [28.533422470092773, 27.980920791625977, 29.414744463247377]

- Time interval n.1: [143.96, 144.16]
 - * y_true: [21.21173425 33.31570327]
 - * v_ann: [36.75670623779297, 32.536277770996094, 29.414744463247377]

- Time interval n.2: [144.16, 144.36]
 - * y_true: [29.72284222 27.36558717]
 - * v_ann: [28.09098243713379, 27.460695266723633, 29.414744463247377]

- * err= 3.1881443019855724
- * Learning rate NN = 0.0002952449722215533
- * diff = 0.025194424582105412



For scene 47/90

* use LR_NN=0.0005 with err=17.12672007260323 at it=24
 * v0_scn_mean = 29.449859769175482
 * MAE = 3.1881443019855724

df n.3, scene n.48/90

We have 3 time intervals inside [149.36, 149.96]

- Time interval n.0: [149.36, 149.56]
 - * y_true: [25.90049539 27.45094024]
 - * v_ann: [27.021514892578125, 27.263330459594727, 23.443555328520937]

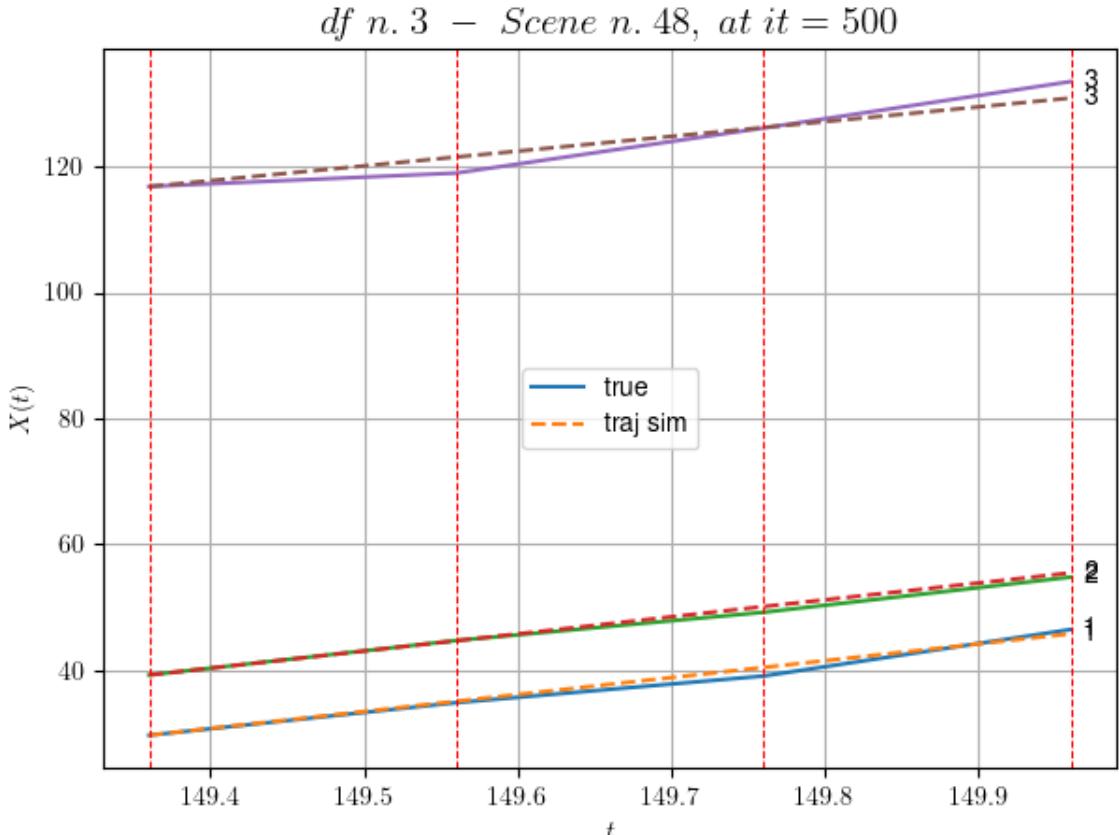
- Time interval n.1: [149.56, 149.76]
 - * y_true: [21.18057417 22.42095425]
 - * v_ann: [26.896297454833984, 27.176950454711914, 23.443555328520937]

- Time interval n.2: [149.76, 149.96]
 - * y_true: [37.02126181 27.98148311]
 - * v_ann: [26.742307662963867, 26.77381706237793, 23.443555328520937]

```

* err= 1.4225698619773166
* Learning rate NN = 5.9048988987342454e-06
* diff = 8.041825934390623e-05

```



For scene 48/90

```

* use LR_NN=1e-05 with err=26.967466418423204 at it=24
* v0 scn mean = 23.83694171443961
* MAE = 1.2868577627352922

```

df n.3, scene n.49/90

We have 3 time intervals inside [156.16, 156.76]

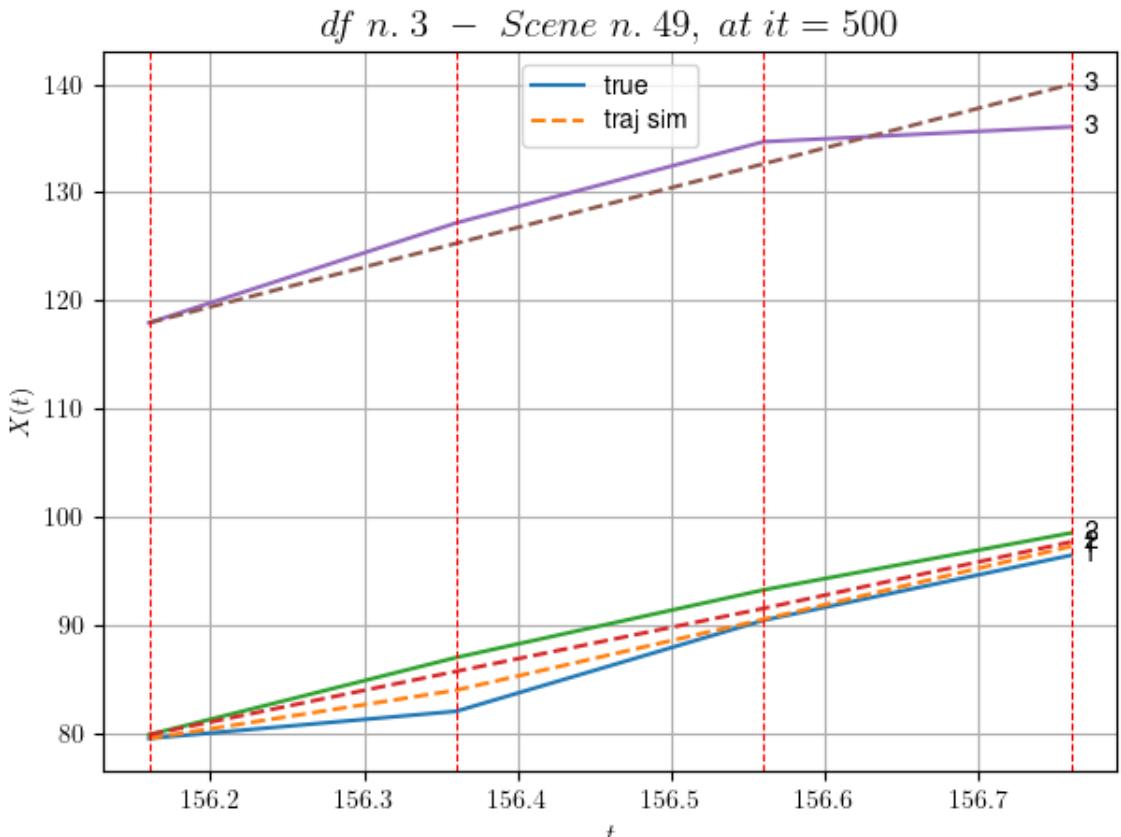
- Time interval n.0: [156.16, 156.36]
 - * y_true: [12.56997445 35.72646923]
 - * v_ann: [22.328575134277344, 29.32843589782715, 36.779616906742504]

- Time interval n.1: [156.36, 156.56]
 - * y_true: [42.07610638 31.26485338]
 - * v_ann: [32.768699645996094, 29.114234924316406, 36.779616906742504]

- Time interval n.2: [156.56, 156.76]
 - * y_true: [30.09491831 26.35466702]

```
* v_ann: [33.7711181640625, 30.773178100585938, 36.  
779616906742504]
```

```
* err= 2.749388982763117  
* Learning rate NN = 5.904899080633186e-05  
* diff = 0 00016055502606385002
```



For scene 49/90

```
* use LR_NN=0.0001 with err=30.416433004299297 at it=24  
* v0_scn_mean = 36.37284019672808  
* MAE = 2.6637956088623826
```

df n.3, scene n.50/90

We have 4 time intervals inside [207.96, 208.76]

- Time interval n.0: [207.96, 208.16]
 - * y_true: [30.12104774 28.85226703]
 - * v_ann: [30.958877563476562, 30.74985122680664, 31.124909645190808]

- Time interval n.1: [208.16, 208.36]
 - * y_true: [31.19139939 27.73265496]
 - * v_ann: [29.76910400390625, 29.932674407958984, 31.124909645190808]

```

-----  

- Time interval n.2: [208.36, 208.56]  

* y_true: [31.59181924 26.81292648]  

* v_ann: [29.41576385498047, 29.55843162536621, 31.  

124909645190808]  

-----  

- Time interval n.3: [208.56, 208.76]  

* y_true: [33.88244728 28.87369213]  

* v_ann: [29.135395050048828, 29.51416778564453, 3  

1.124909645190808]  

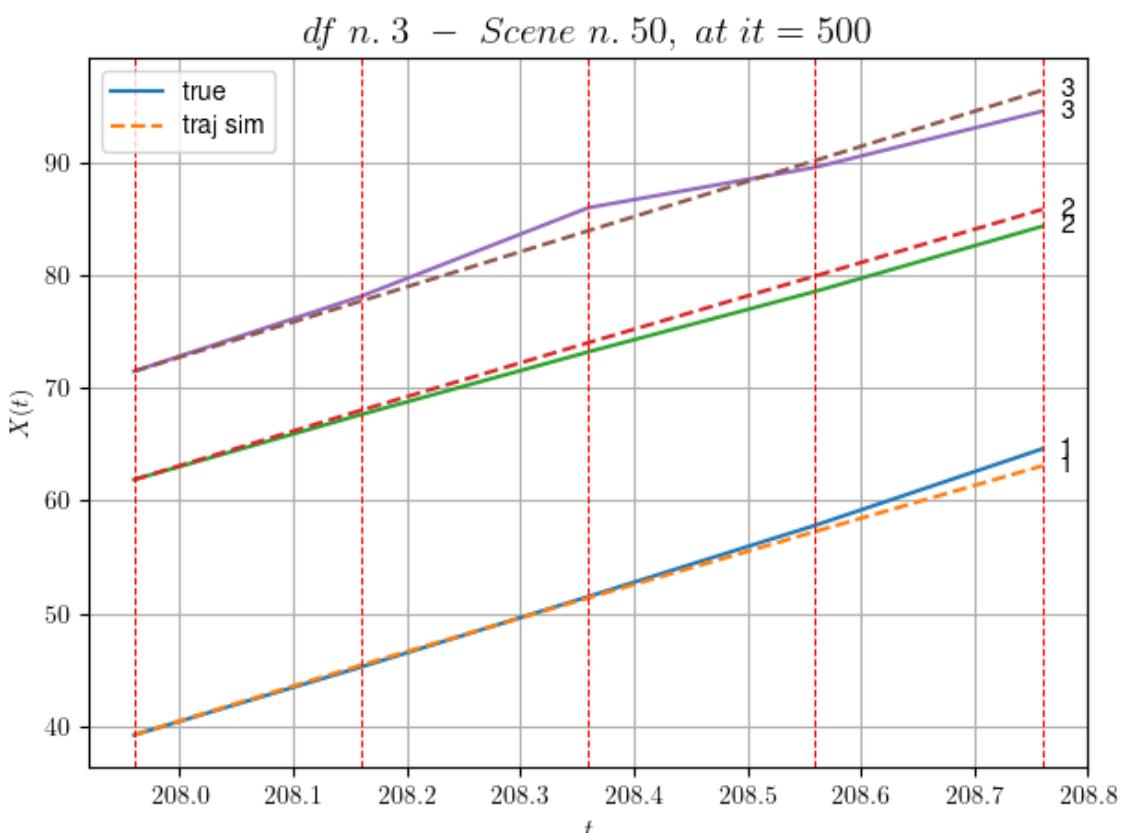
-----  

* err= 1.0435529354625672  

* Learning rate NN = 0.000239148415857926  

* diff = 0.00481302827560004

```



For scene 50/90

```

* use LR_NN=0.0005 with err=10.902929836058169 at it=24
* v0_scn_mean = 31.057415116985315
* MAE = 1.037570676620893

```

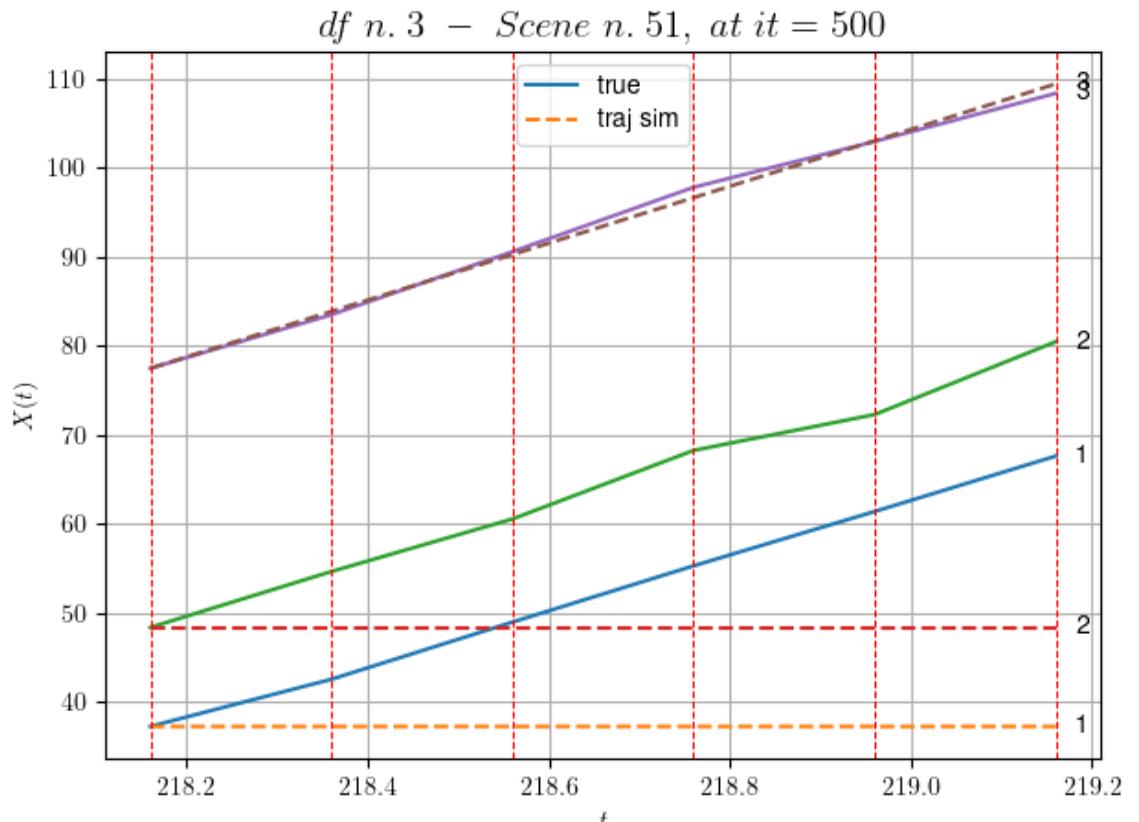
df n.3, scene n.51/90

```

We have 5 time intervals inside [218.16,219.16]
- Time interval n.0: [218.16, 218.36]
* y_true: [26.47083003 31.40159485]

```

```
* v_ann: [-0.00024323431716766208, -3.6404123115700  
42e-19, 31.946925583263344]  
  
-----  
-----  
- Time interval n.1: [218.36, 218.56]  
* y_true: [32.09751616 29.50187244]  
* v_ann: [-2.42169826378813e-05, -5.391370396140333  
e-19, 31.946925583263344]  
  
-----  
-----  
- Time interval n.2: [218.56, 218.76]  
* y_true: [31.61167285 38.50305628]  
* v_ann: [-8.154786337399855e-05, -8.85639211276254  
7e-20, 31.946925583263344]  
  
-----  
-----  
- Time interval n.3: [218.76, 218.96]  
* y_true: [30.522016 20.15190279]  
* v_ann: [-3.2493778689968167e-06, -1.8281521302973  
88e-19, 31.946925583263344]  
  
-----  
-----  
- Time interval n.4: [218.96, 219.16]  
* y_true: [31.13252968 40.9045659 ]  
* v_ann: [-0.00041505126864649355, -3.3015569981558  
7e-20, 31.946925583263344]  
  
-----  
-----  
* err= 232.38678796292996  
* Learning rate NN = 0.0003874204121530056  
* diff = 6.573717331548323e-05
```



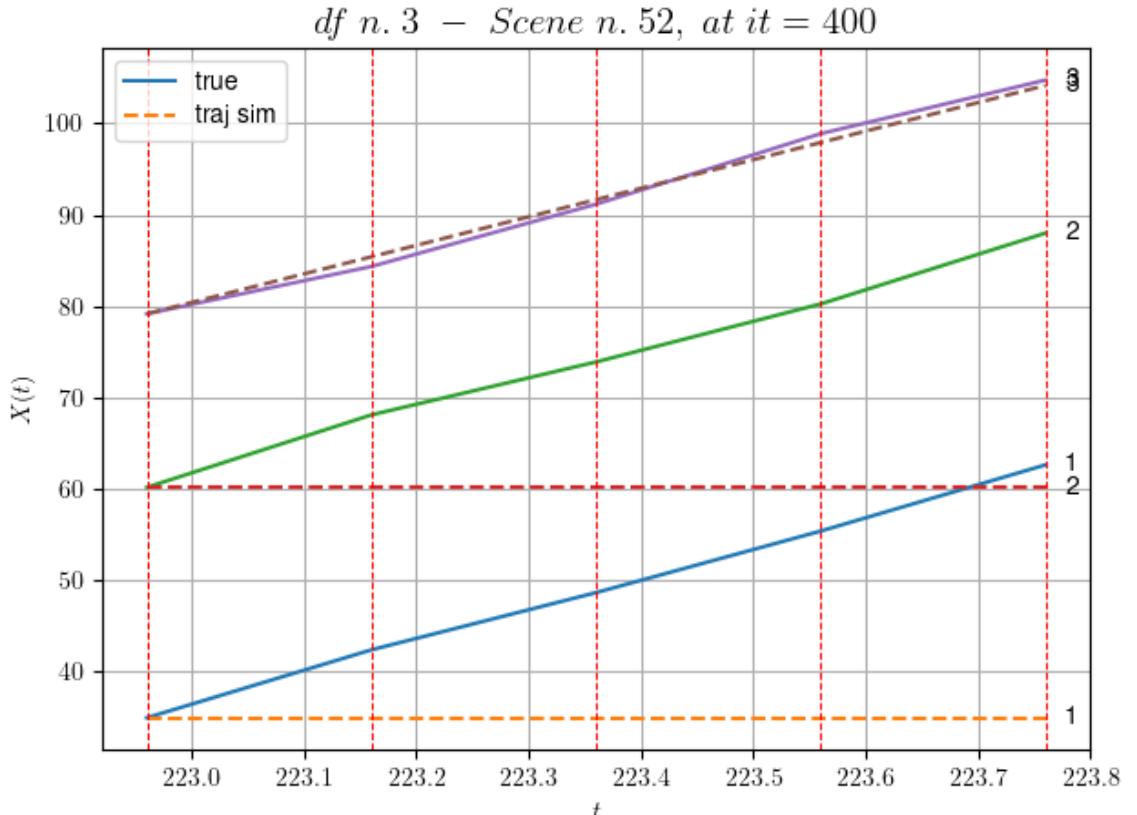
For scene 51/90

* use LR_NN=0.001 with err=32.64399020147524 at it=24
* v0_scn_mean = 31.830110135680457
* MAE = 1.4101775123316809

df n.3, scene n.52/90

We have 4 time intervals inside [222.96,223.76]

* err= 190.9265911048237
* Learning rate NN = 0.000265720474999398
* diff = 6.258968596739578e-07



For scene 52/90

- * use LR_NN=0.0005 with err=6.292834429675651 at it=24
- * v0_scn_mean = 31.183769562963107
- * MAE = 190.9265911048237

df n.3, scene n.53/90

We have 6 time intervals inside [247.36, 248.56]

- Time interval n.0: [247.36, 247.56]
 - * y_true: [24.34113117 25.37248976]
 - * v_ann: [3.420767575451622e-12, 25.28743743896484]

4, 29.199545092787744]

- Time interval n.1: [247.56, 247.76]
 - * y_true: [20.86113385 27.00305492]
 - * v_ann: [2.511697880930308e-12, 24.43432426452636]

7, 29.199545092787744]

- Time interval n.2: [247.76, 247.96]
 - * y_true: [25.44173909 29.15378269]
 - * v_ann: [4.065600937505631e-13, 27.32125282287597]

7, 29.199545092787744]

```

    - Time interval n.3: [247.96, 248.16]
      * y_true: [34.05263307 29.24437105]
      * v_ann: [1.3611719173675652e-13, 30.13580513000488
3, 29.199545092787744]
```

```

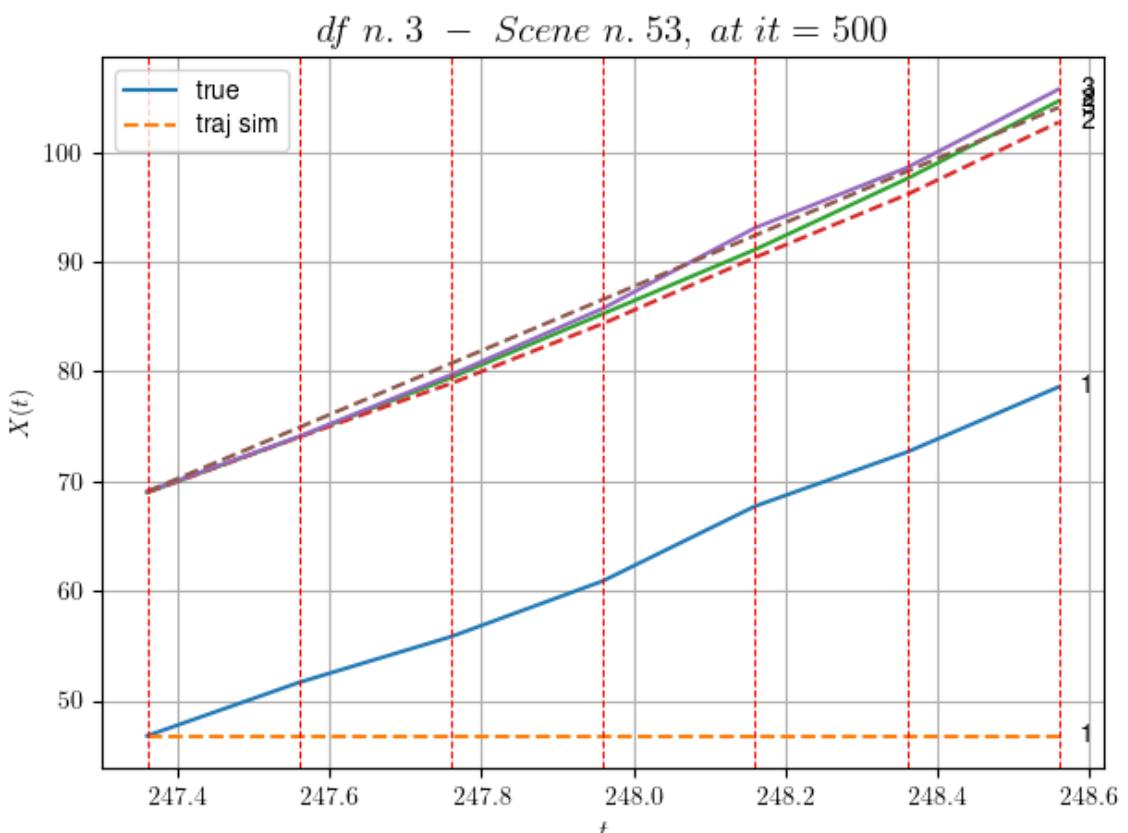
    - Time interval n.4: [248.16, 248.36]
      * y_true: [24.6823336 32.34552948]
      * v_ann: [5.664957435438933e-13, 28.71737670898437
5, 29.199545092787744]
```

```

    - Time interval n.5: [248.36, 248.56]
      * y_true: [29.77329807 35.48696999]
      * v_ann: [5.910696194641463e-14, 33.00064849853515
6, 29.199545092787744]
```

```

* err= 116.16584367435406
* Learning rate NN = 0.00031381050939671695
* diff = 0.0023540001816684253
```

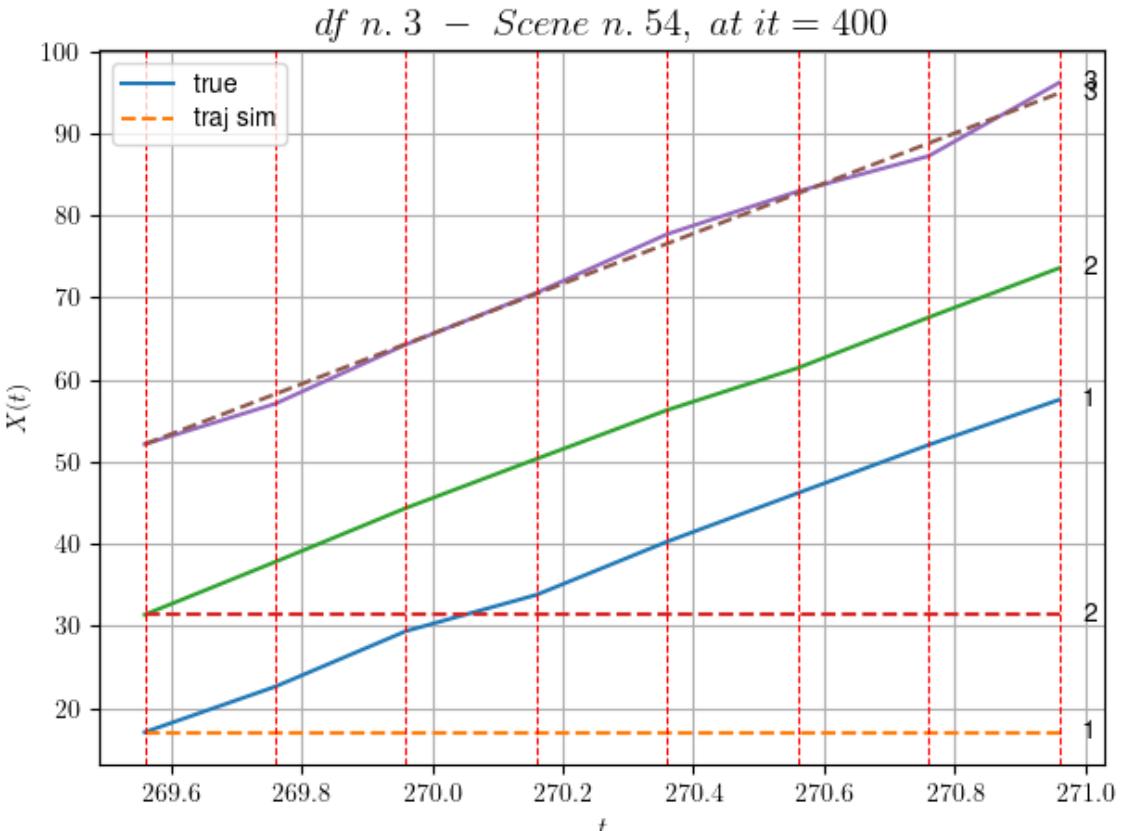


```

For scene 53/90
* use LR_NN=0.001 with err=33.58286746327354 at it=24
* v0_scn_mean = 29.24757235128196
* MAE = 116.03450539616726
```

df n.3, scene n.54/90

```
We have 7 time intervals inside [269.56,270.96]
* err= 412.6900481180083
* Learning rate NN = 0.00015690525469835848
* diff = 2 32669663009165582e-07
```



For scene 54/90

```
* use LR_NN=0.0005 with err=5.759196580432235 at it=24
* v0_scn_mean = 30.49873756909922
* MAE = 412.6900481180083
```

df n.3, scene n.55/90

```
We have 2 time intervals inside [316.16,316.56]
```

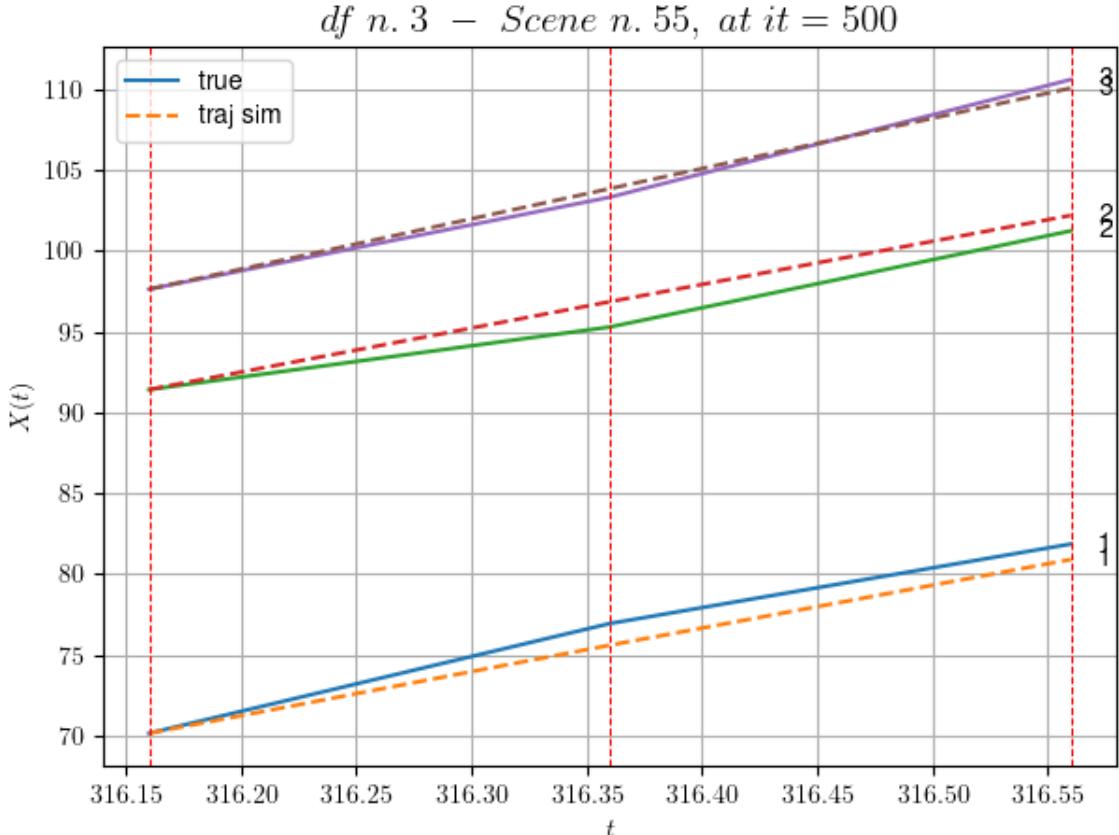
- Time interval n.0: [316.16, 316.36]
 - * y_true: [33.9635286 19.3731464]
 - * v_ann: [27.25933265686035, 27.21030044555664, 31.

11973130725109]

- Time interval n.1: [316.36, 316.56]
 - * y_true: [24.60296417 29.75560281]
 - * v_ann: [26.5107421875, 26.700651168823242, 31.119

73130725109]

```
* err= 0.7387810505443824
* Learning rate NN = 0.0007289999630302191
* diff = 1.5379585177721644e-05
```



For scene 55/90

```
* use LR_NN=0.001 with err=2.882169332904461 at it=24
* v0_scn_mean = 31.052547479089757
* MAE = 0.7386701171883181
```

df n.3, scene n.56/90

We have 4 time intervals inside [317.76, 318.56]

- Time interval n.0: [317.76, 317.96]
 - * y_true: [22.24301013 28.10582296]
 - * v_ann: [27.930644989013672, 28.55984878540039, 28.729606502534047]

- Time interval n.1: [317.96, 318.16]
 - * y_true: [28.26433817 33.10585656]
 - * v_ann: [26.197904586791992, 25.414897918701172, 28.729606502534047]

- Time interval n.2: [318.16, 318.36]
 - * y_true: [11.28182915 18.67354228]
 - * v_ann: [26.917457580566406, 17.369407653808594, 28.729606502534047]

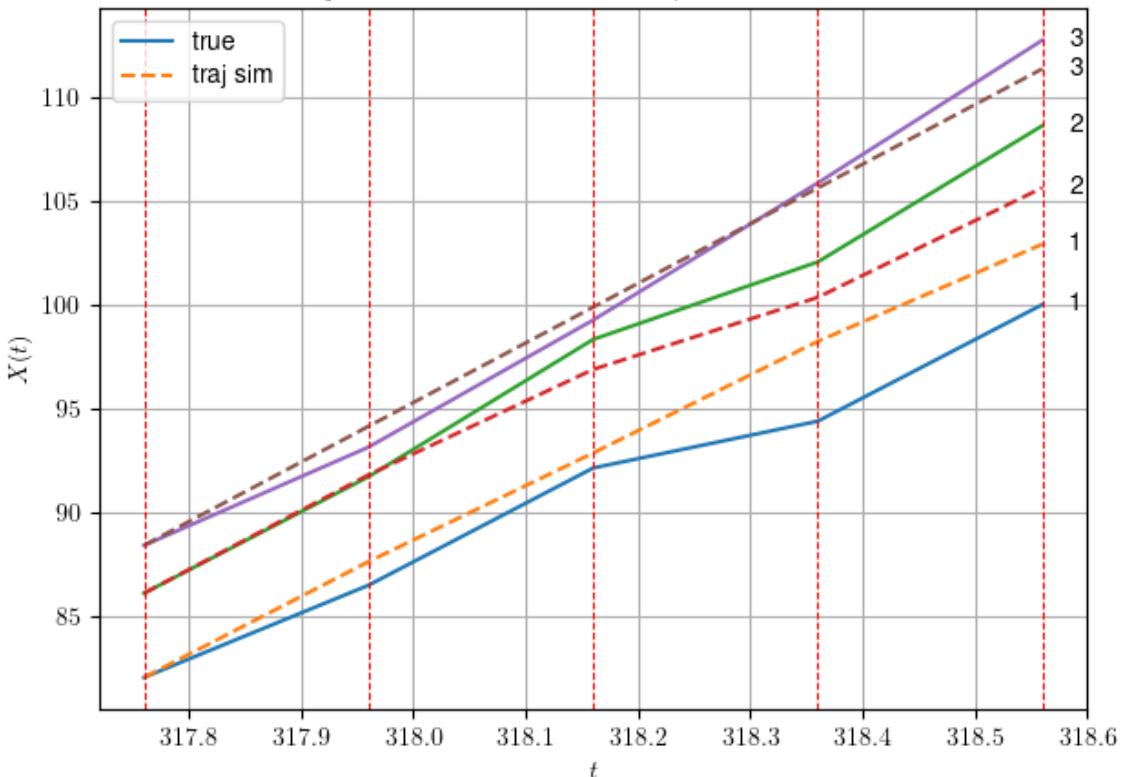
8.729606502534047]

- Time interval n.3: [318.36, 318.56]
 - * y_true: [28.12514655 32.86712293]
 - * v_ann: [23.41630744934082, 26.444290161132812, 2

8.729606502534047]

- * err= 2.830701256399474
- * Learning rate NN = 0.000478296831715852
- * diff = 0.021414275806459937

df n. 3 – Scene n. 56, at it = 500



For scene 56/90

- * use LR_NN=0.001 with err=18.953527661897215 at it=24
- * v0_scn_mean = 28.805830055344543
- * MAE = 1.7868926103870957

df n.3, scene n.57/90

We have 6 time intervals inside [325.76,326.96]

- Time interval n.0: [325.76, 325.96]
 - * y_true: [25.31057708 30.22149101]
 - * v_ann: [26.973093032836914, 27.767410278320312, 3

3.13555230710718]

```
- Time interval n.1: [325.96, 326.16]
  * y_true: [25.23074384 33.46208613]
  * v_ann: [27.125459671020508, 27.921430587768555, 3
3.13555230710718]

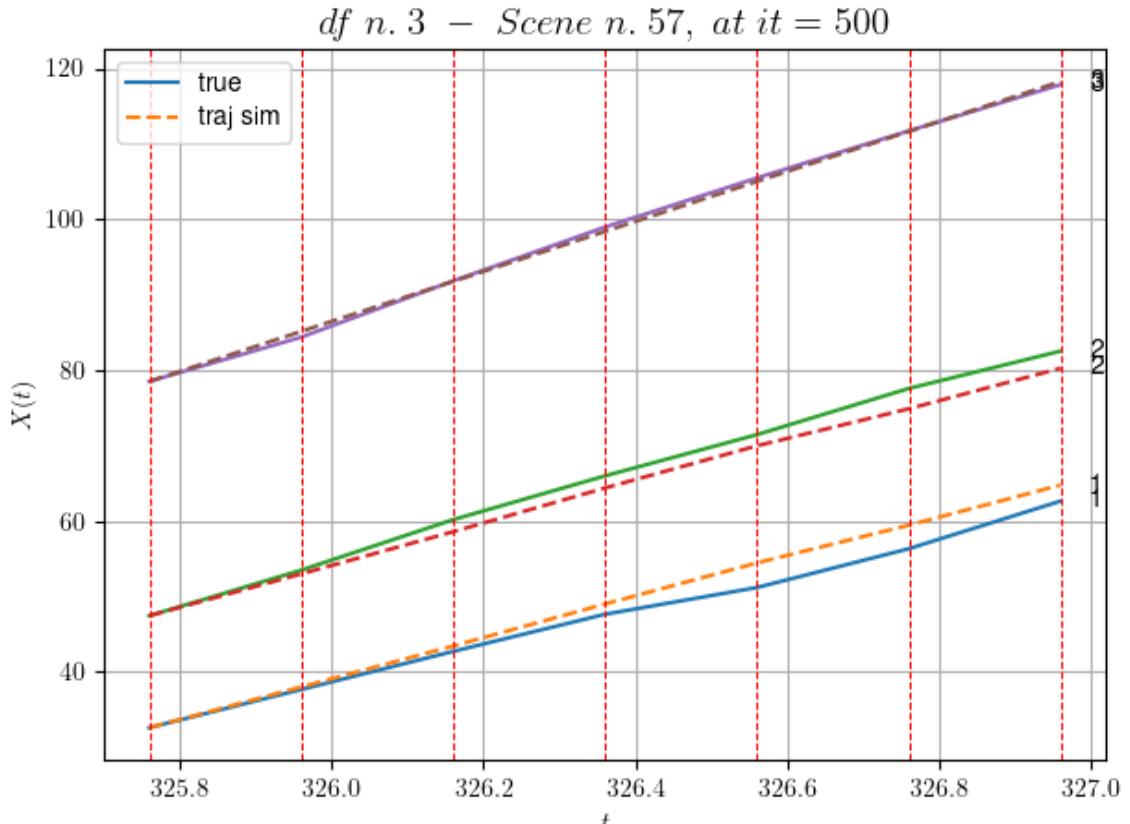
-----
- Time interval n.2: [326.16, 326.36]
  * y_true: [24.63092838 29.01218385]
  * v_ann: [27.87297248840332, 28.99659538269043, 33.
13555230710718]

-----
- Time interval n.3: [326.36, 326.56]
  * y_true: [17.72077879 27.33248549]
  * v_ann: [27.223947525024414, 27.956422805786133, 3
3.13555230710718]

-----
- Time interval n.4: [326.56, 326.76]
  * y_true: [25.71142574 30.60327071]
  * v_ann: [25.024185180664062, 24.532516479492188, 3
3.13555230710718]

-----
- Time interval n.5: [326.76, 326.96]
  * y_true: [31.6120671 24.79299826]
  * v_ann: [26.577482223510742, 26.87400245666504, 3
3.13555230710718]

-----
* err= 2.3144401590357098
* Learning rate NN = 0.00015690525469835848
* diff = 0.07779170042026617
```



For scene 57/90

- * use LR_NN=0.0005 with err=11.123721941179113 at it=24
- * v0_scn_mean = 32.947419309460166
- * MAE = 1.6762067890493935

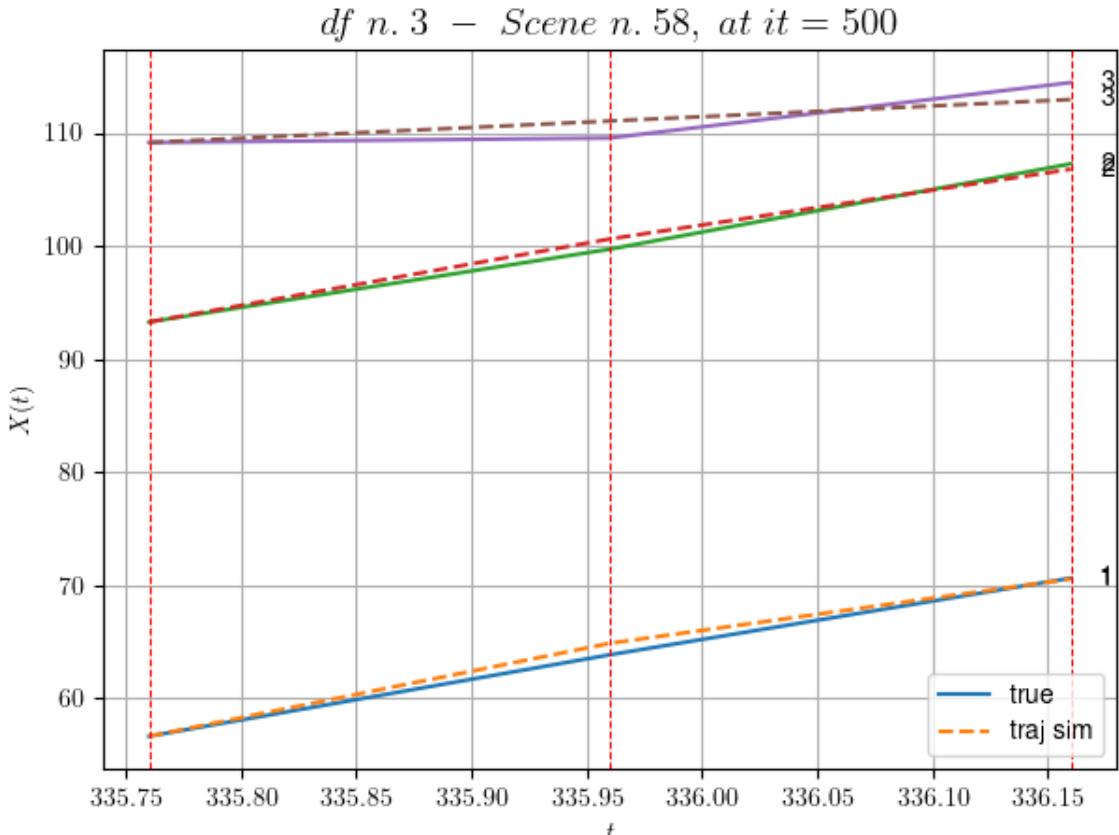
df n.3, scene n.58/90

We have 2 time intervals inside [335.76, 336.16]

- Time interval n.0: [335.76, 335.96]
 - * y_true: [36.00253797 32.17585284]
 - * v_ann: [41.08389663696289, 36.688507080078125, 9.495680524399047]

- Time interval n.1: [335.96, 336.16]
 - * y_true: [33.90297107 37.71766361]
 - * v_ann: [28.462190628051758, 30.79322052001953, 9.495680524399047]

- * err= 0.7323822904485139
- * Learning rate NN = 0.00036449998151510954
- * diff = 0.004821633024475691



For scene 58/90

```
* use LR_NN=0.0005 with err=16.935902852410532 at it=24
* v0_scn_mean = 10.725938772335905
* MAE = 0.6976741980378446
```

df n.3, scene n.59/90

We have 3 time intervals inside [371.16, 371.76]

- Time interval n.0: [371.16, 371.36]
 - * y_true: [24.42036896 26.80112378]
 - * v_ann: [27.729997634887695, 26.782392501831055, 3

2.5395075992261]

- Time interval n.1: [371.36, 371.56]
 - * y_true: [25.21053633 31.30165898]
 - * v_ann: [27.686716079711914, 26.72711944580078, 3

2.5395075992261]

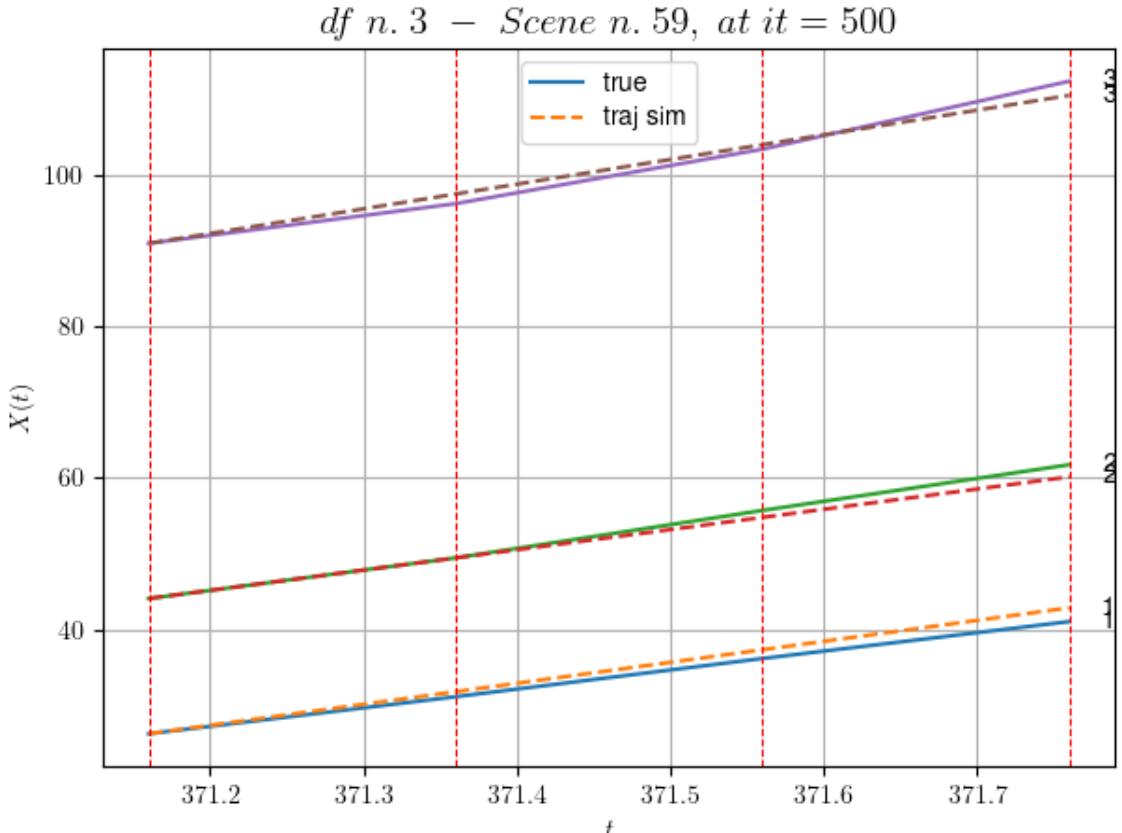
- Time interval n.2: [371.56, 371.76]
 - * y_true: [24.36067127 30.15199262]
 - * v_ann: [27.669401168823242, 26.74749755859375, 3

2.5395075992261]

```

* err= 1.161632823209931
* Learning rate NN = 5.9048988987342454e-06
* diff = 0.026404058354364768

```



For scene 59/90

```

* use LR_NN=1e-05 with err=7.677455500808109 at it=24
* v0 scn mean = 32.38713725729096
* MAE = 1.161632823209931

```

df n.3, scene n.60/90

We have 4 time intervals inside [387.36, 388.16]

- Time interval n.0: [387.36, 387.56]
 - * y_true: [32.47194771 39.46360823]
 - * v_ann: [28.433982849121094, 29.011606216430664, 3
3.03189808825744]

- Time interval n.1: [387.56, 387.76]
 - * y_true: [28.80212467 26.65295039]
 - * v_ann: [31.99877166748047, 34.003787994384766, 3
3.03189808825744]

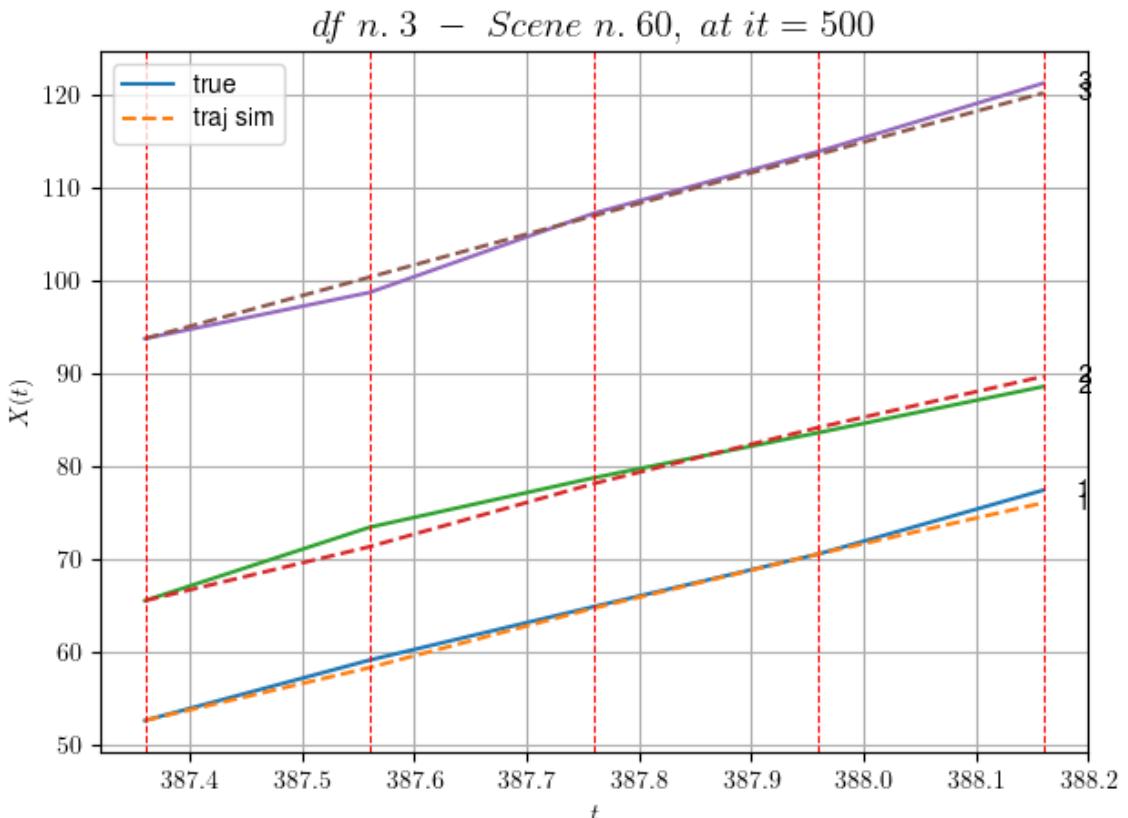
- Time interval n.2: [387.76, 387.96]
 - * y_true: [28.30253286 24.25305315]

```
* v_ann: [29.16886329650879, 30.152915954589844, 3
3.03189808825744]
```

```
- Time interval n.3: [387.96, 388.16]
* y_true: [34.31356051 24.78356316]
* v_ann: [27.49704933166504, 27.43280792236328, 33.
```

```
03189808825744]
```

```
* err= 0.8512998944529686
* Learning rate NN = 0.000239148415857926
* diff = 0.000561275221070027
```



For scene 60/90

```
* use LR_NN=0.0005 with err=16.154363173928164 at it=24
* v0_scn_mean = 32.84998433908691
* MAE = 0.8512998944529686
```

df n.3, scene n.61/90

We have 2 time intervals inside [390.36, 390.76]

```
- Time interval n.0: [390.36, 390.56]
* y_true: [34.37306474 33.21473815]
* v_ann: [32.122901916503906, 32.032386779785156, 3
6.354260436289934]
```

```

-----  

- Time interval n.1: [390.56, 390.76]  

  * y_true: [31.79338609 29.7348149 ]  

  * v_ann: [32.40652084350586, 32.420310974121094, 3  

  6.354260436289934]

```

```

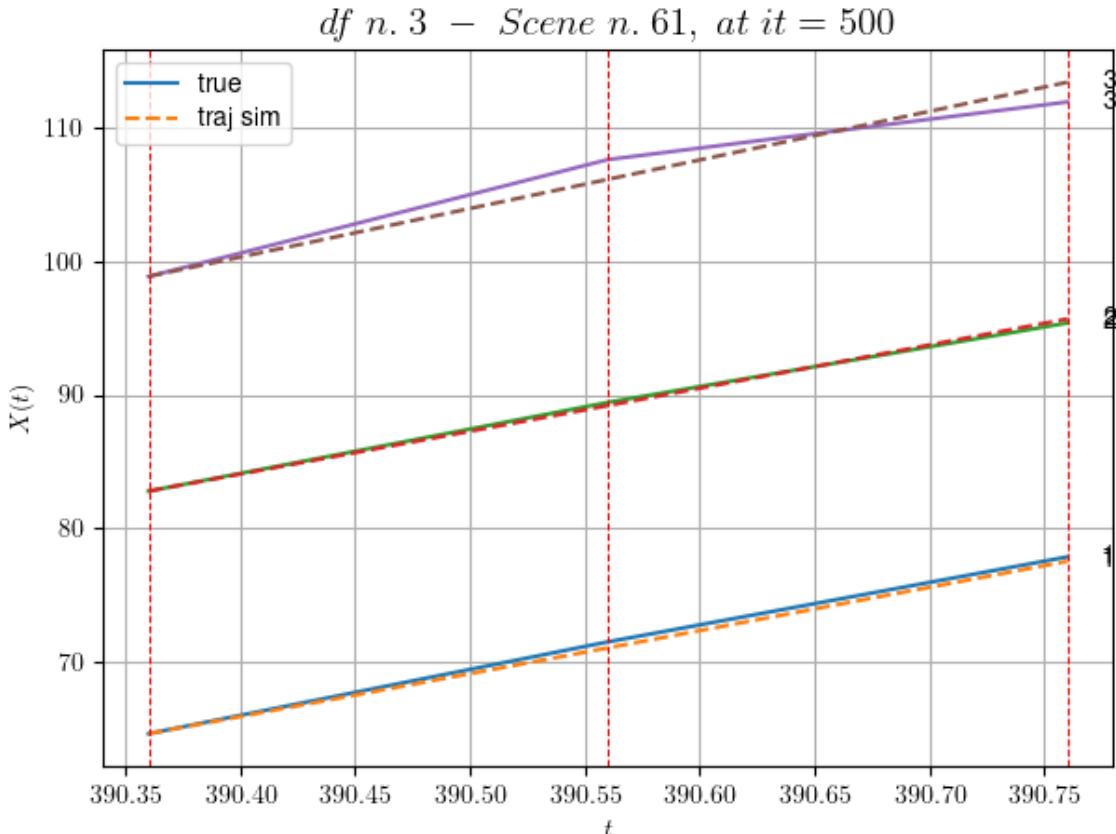
-----  

* err= 0.5367276507140294  

* Learning rate NN = 7.289998757187277e-05  

* diff = 0 00019169623588688456

```



For scene 61/90

```

* use LR_NN=0.0001 with err=1.055779631412592 at it=24
* v0_scn_mean = 35.97300509540553
* MAE = 0.4883378745029751

```

df n.3, scene n.62/90

```

=====  

=====  

We have 4 time intervals inside [427.96,428.76]

```

```

-----  

- Time interval n.0: [427.96, 428.16]  

  * y_true: [33.16108667 24.70091575]  

  * v_ann: [30.315092086791992, 0.0, 37.3498561754796  

4]

```

```

-----  

- Time interval n.1: [428.16, 428.36]  

  * y_true: [36.08159054 35.68166414]  

  * v_ann: [34.34895706176758, 0.0, 37.3498561754796

```

4]

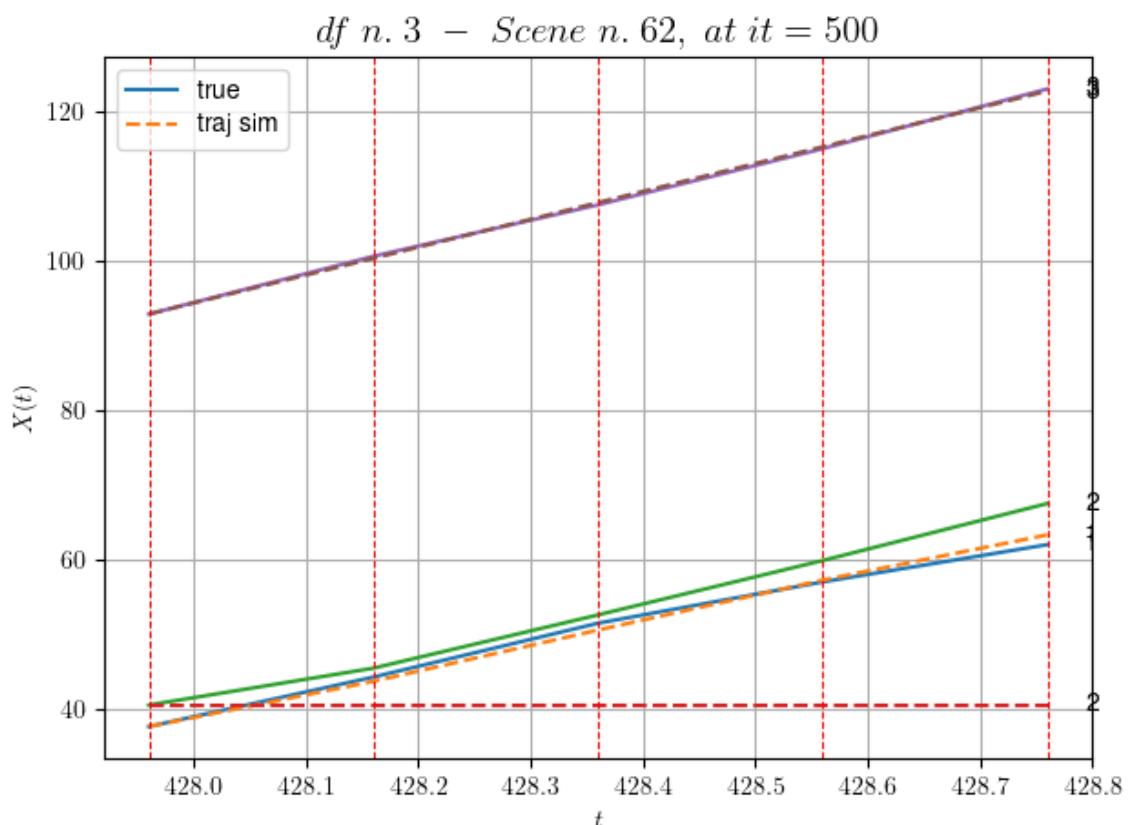
```
- Time interval n.2: [428.36, 428.56]
  * y_true: [27.64533545 36.4184567 ]
  * v_ann: [33.42804718017578, 0.0, 37.3498561754796
```

4]

```
- Time interval n.3: [428.56, 428.76]
  * y_true: [24.96174823 38.17283814]
  * v_ann: [30.329240798950195, 0.0, 37.3498561754796
```

4]

```
* err= 85.13704182621132
* Learning rate NN = 0.000239148415857926
* diff = 1.1848296907146505e-05
```



For scene 62/90

```
* use LR_NN=0.0005 with err=65.44536448534242 at it=24
* v0_scn_mean = 36.908865134943305
* MAE = 17.9960497455705
```

df n.3, scene n.63/90

We have 3 time intervals inside [439.36, 439.96]

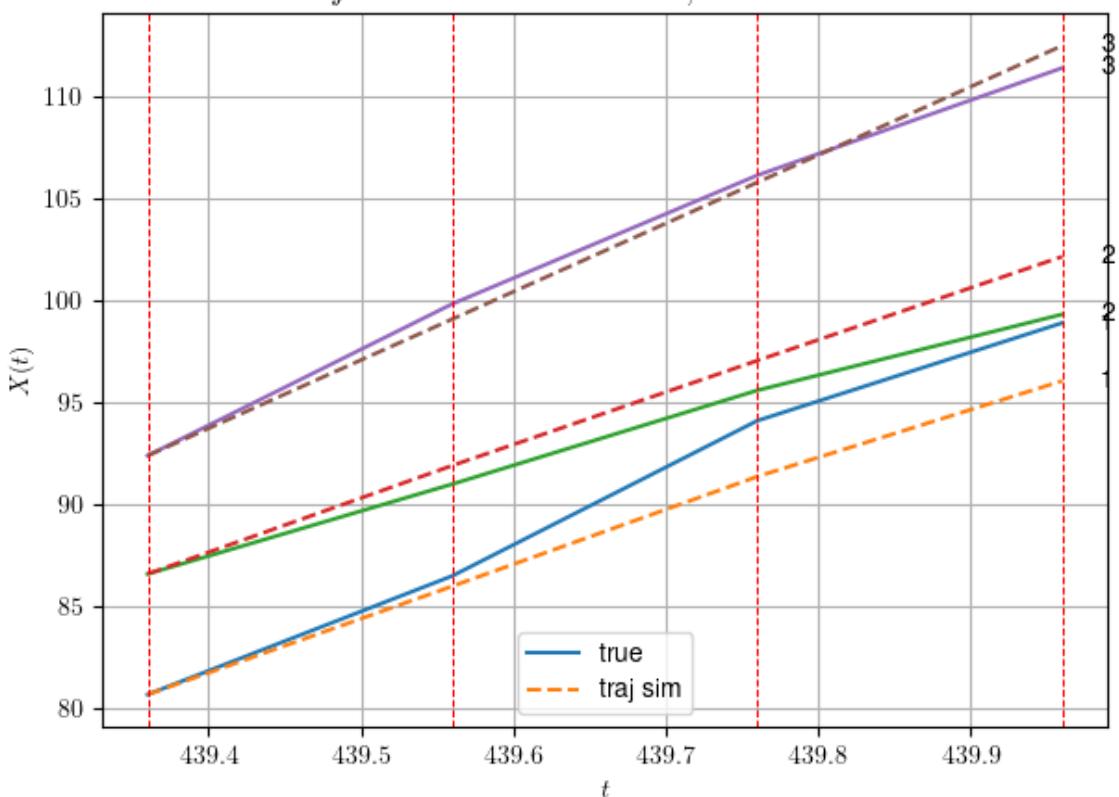
- Time interval n.0: [439.36, 439.56]
 - * y_true: [29.12388438 22.06331107]
 - * v_ann: [26.592666625976562, 26.622068405151367, 3.53637857273001]
-

- Time interval n.1: [439.56, 439.76]
 - * y_true: [38.07606081 22.99369197]
 - * v_ann: [26.888399124145508, 25.742042541503906, 3.53637857273001]
-

- Time interval n.2: [439.76, 439.96]
 - * y_true: [23.98424021 18.65338098]
 - * v_ann: [23.472854614257812, 25.517986297607422, 3.53637857273001]
-

* err= 2.3961711067382745
 * Learning rate NN = 5.904899080633186e-05
 * diff = 0.006071614971800062

df n. 3 – Scene n. 63, at it = 500



For scene 63/90

- * use LR_NN=0.0001 with err=13.981350478327338 at it=24
 - * v0_scn_mean = 33.32419601714194
 - * MAE = 0.6695866287396077
-
-

```
df n.3, scene n.64/90
```

We have 2 time intervals inside [448.36, 448.76]

- Time interval n.0: [448.36, 448.56]
 - * y_true: [32.70350359 27.85524745]
 - * v_ann: [32.56096267700195, 32.17224884033203, 31.

585048186376223]

- Time interval n.1: [448.56, 448.76]
 - * y_true: [39.76511656 28.75604876]
 - * v_ann: [32.25746154785156, 32.02910232543945, 31.

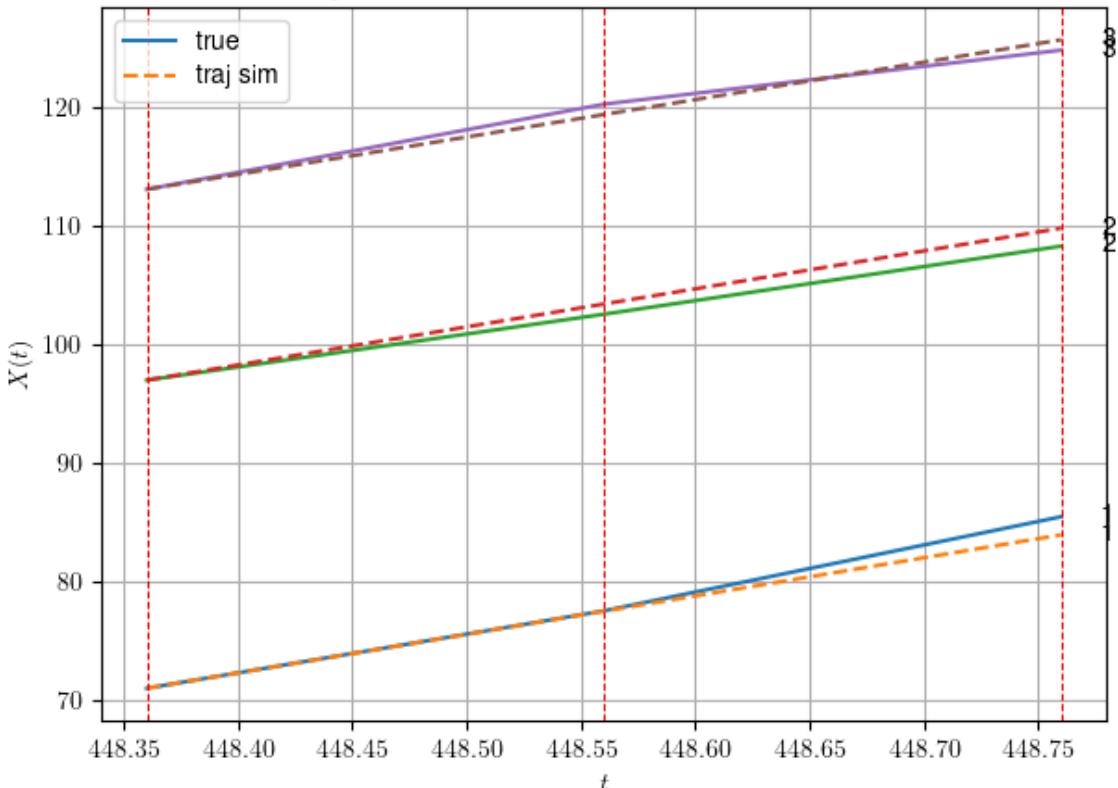
585048186376223]

* err= 0.7691518507357965

* Learning rate NN = 3.6449993785936385e-05

* diff = 0.0018330503715607849

df n. 3 – Scene n. 64, at it = 500



For scene 64/90

- * use LR_NN=5e-05 with err=0.6038614346745705 at it=24
 - * v0_scn_mean = 31.489945366359738
 - * MAE = 0.7211503264568794
-
-

```
df n.3, scene n.65/90
```

We have 7 time intervals inside [465.16, 466.56]

- Time interval n.0: [465.16, 465.36]
 - * y_true: [25.95020905 30.0319773]
 - * v_ann: [26.36107063293457, 26.433683395385742, 24.72207906512819]

- Time interval n.1: [465.36, 465.56]
 - * y_true: [21.30025919 28.782318]
 - * v_ann: [26.451202392578125, 26.487165451049805, 24.72207906512819]

- Time interval n.2: [465.56, 465.76]
 - * y_true: [22.00036741 28.59272475]
 - * v_ann: [26.363075256347656, 26.4383602142334, 24.72207906512819]

- Time interval n.3: [465.76, 465.96]
 - * y_true: [26.90061063 23.70259195]
 - * v_ann: [26.288787841796875, 26.408203125, 24.72207906512819]

- Time interval n.4: [465.96, 466.16]
 - * y_true: [23.75070885 23.26288454]
 - * v_ann: [26.22749137878418, 26.386869430541992, 24.72207906512819]

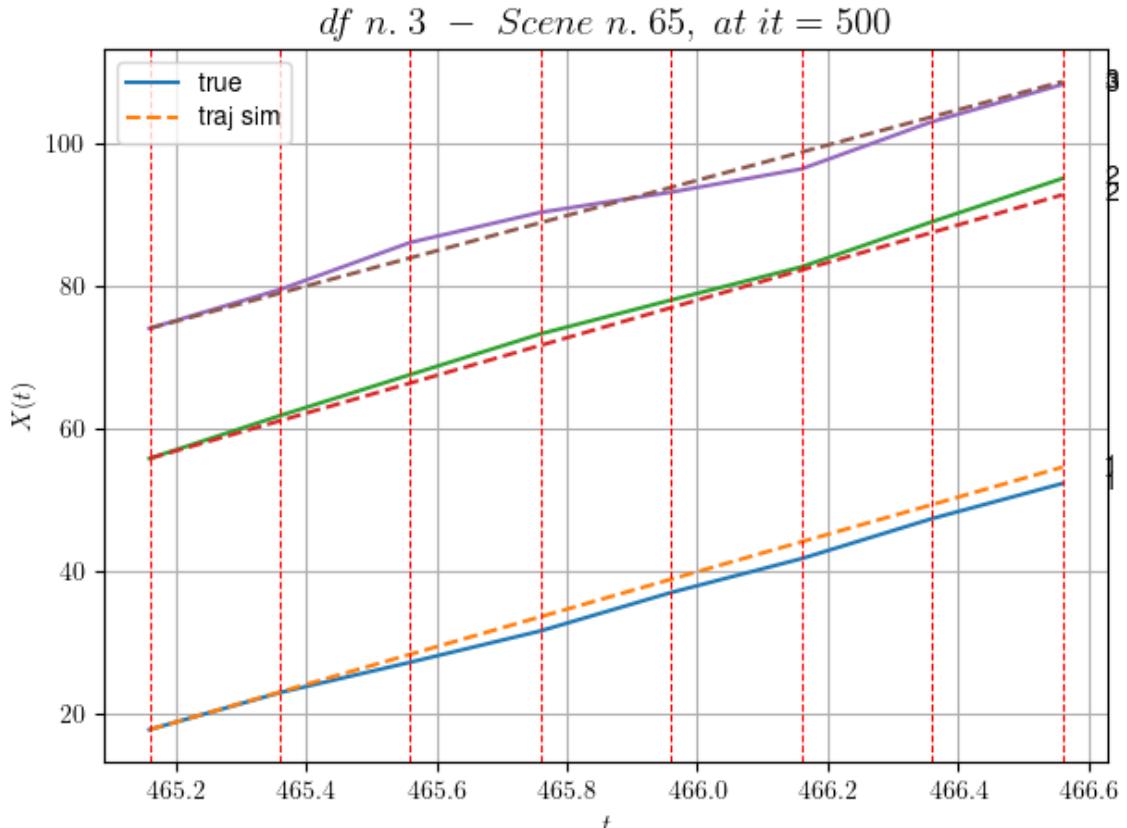
- Time interval n.5: [466.16, 466.36]
 - * y_true: [28.05107156 31.61450449]
 - * v_ann: [26.061168670654297, 26.32007598876953, 24.72207906512819]

- Time interval n.6: [466.36, 466.56]
 - * y_true: [24.65117633 30.37492519]
 - * v_ann: [26.275039672851562, 26.4166259765625, 24.72207906512819]

* err= 2.093955335626015

* Learning rate NN = 1.2709323527815286e-05

* diff = 0.0035902432353895897



For scene 65/90

- * use LR_NN=5e-05 with err=65.81545849303147 at it=24
- * v0_scn_mean = 25.038754084253764
- * MAE = 2.093739948510351

df n.3, scene n.66/90

We have 6 time intervals inside [467.16, 468.36]

- Time interval n.0: [467.16, 467.36]
 - * y_true: [14.52040439 29.14139959]
 - * v_ann: [19.297136306762695, 20.890003204345703, 2

0.77626285260529]

- Time interval n.1: [467.36, 467.56]
 - * y_true: [8.96028804 21.01119683]
 - * v_ann: [20.40497398376465, 21.175064086914062, 2

0.77626285260529]

- Time interval n.2: [467.56, 467.76]
 - * y_true: [15.62056342 22.22157858]
 - * v_ann: [18.205547332763672, 18.558292388916016, 2

0.77626285260529]

```

-----  

    - Time interval n.3: [467.76, 467.96]  

      * y_true: [19.48080782 28.40220095]  

      * v_ann: [18.568239212036133, 18.950763702392578, 2  

0.77626285260529]  

-----  

    - Time interval n.4: [467.96, 468.16]  

      * y_true: [16.10078185 22.34213456]  

      * v_ann: [21.263959884643555, 21.32640266418457, 2  

0.77626285260529]  

-----  

    - Time interval n.5: [468.16, 468.36]  

      * y_true: [18.12099432 23.56241547]  

      * v_ann: [20.345426559448242, 20.0860538482666, 20.  

77626285260529]  

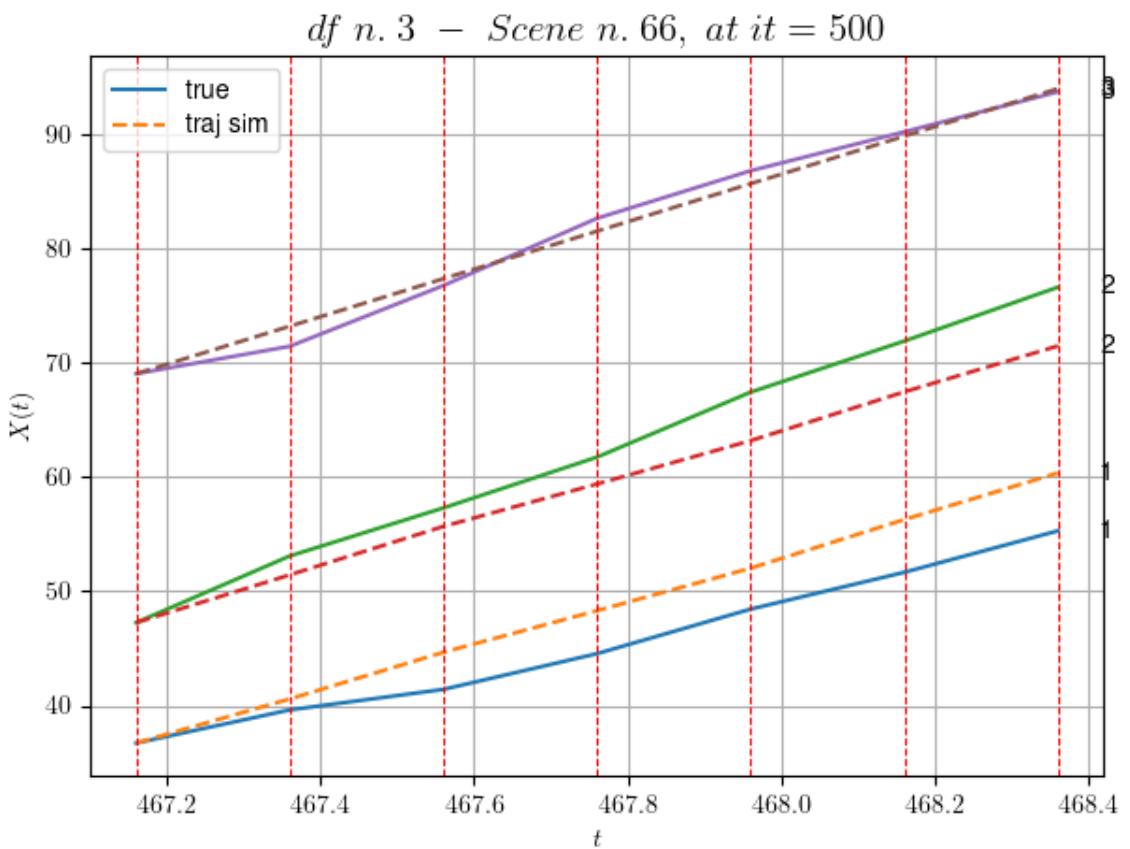
-----  

* err= 7.9251136726937235  

* Learning rate NN = 0.00031381050939671695  

* diff = 0.0252670050500201

```



For scene 66/90
* use LR_NN=0.001 with err=16.179818129605767 at it=24
* v0_scn_mean = 21.329686667323255
* MAE = 7.9251136726937235

df n.3, scene n.67/90

We have 3 time intervals inside [480.76, 481.36]

- Time interval n.0: [480.76, 480.96]

- * y_true: [26.72145209 13.04113053]

- * v_ann: [17.82517433166504, 18.38254165649414, 18.30484173744443]

- Time interval n.1: [480.96, 481.16]

- * y_true: [27.70182882 12.50117676]

- * v_ann: [17.650259017944336, 18.532936096191406, 18.30484173744443]

- Time interval n.2: [481.16, 481.36]

- * y_true: [16.26121495 12.26123448]

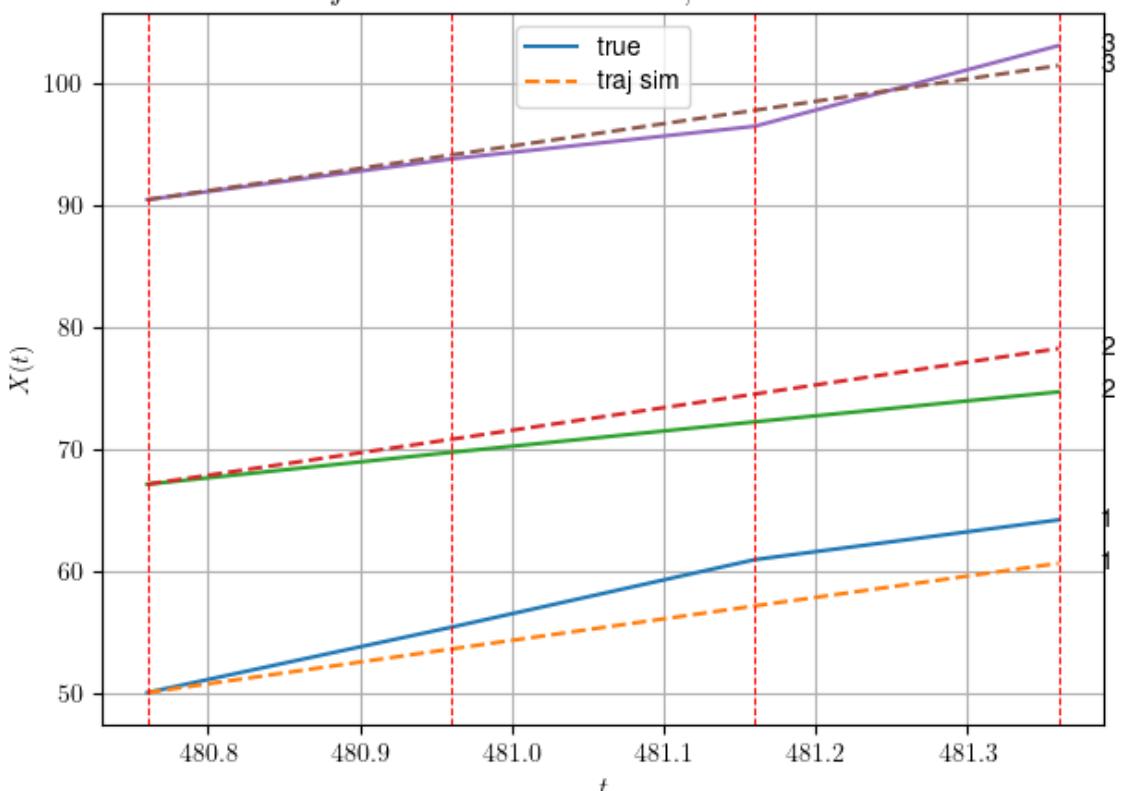
- * v_ann: [17.444971084594727, 18.64304542541504, 18.30484173744443]

- * err= 4.464015886583115

- * Learning rate NN = 2.952449540316593e-05

- * diff = 0.0008297786454045664

df n. 3 – Scene n. 67, at it = 500



For scene 67/90

- * use LR_NN=5e-05 with err=15.59304655942348 at it=24

- * v0_scn_mean = 19.00655070811078

- * MAE = 4.4314552694174205

df n.3, scene n.68/90

We have 2 time intervals inside [487.16, 487.56]

- Time interval n.0: [487.16, 487.36]

- * y_true: [6.3002445 28.62315801]

- * v_ann: [14.69176197052002, 14.658785820007324, 2
3.0718316216877]

- Time interval n.1: [487.36, 487.56]

- * y_true: [10.63044184 13.60161023]

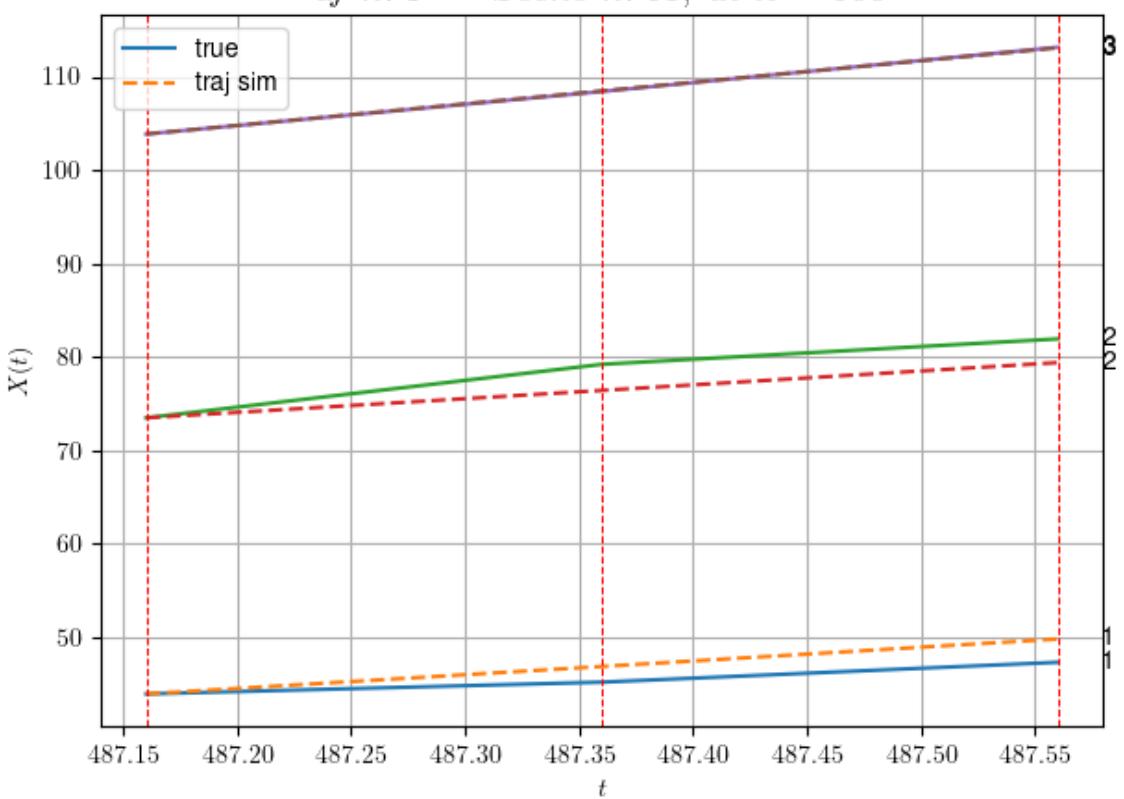
- * v_ann: [14.713319778442383, 14.888628005981445, 2
3.0718316216877]

- * err= 2.5864353229486805

- * Learning rate NN = 3.6449993785936385e-05

- * diff = 0.0015255794528536981

df n. 3 – Scene n. 68, at it = 500



For scene 68/90

- * use LR_NN=5e-05 with err=3.8722238481802864 at it=24

- * v0_scn_mean = 23.487521413325826

- * MAE = 2.5864353229486805

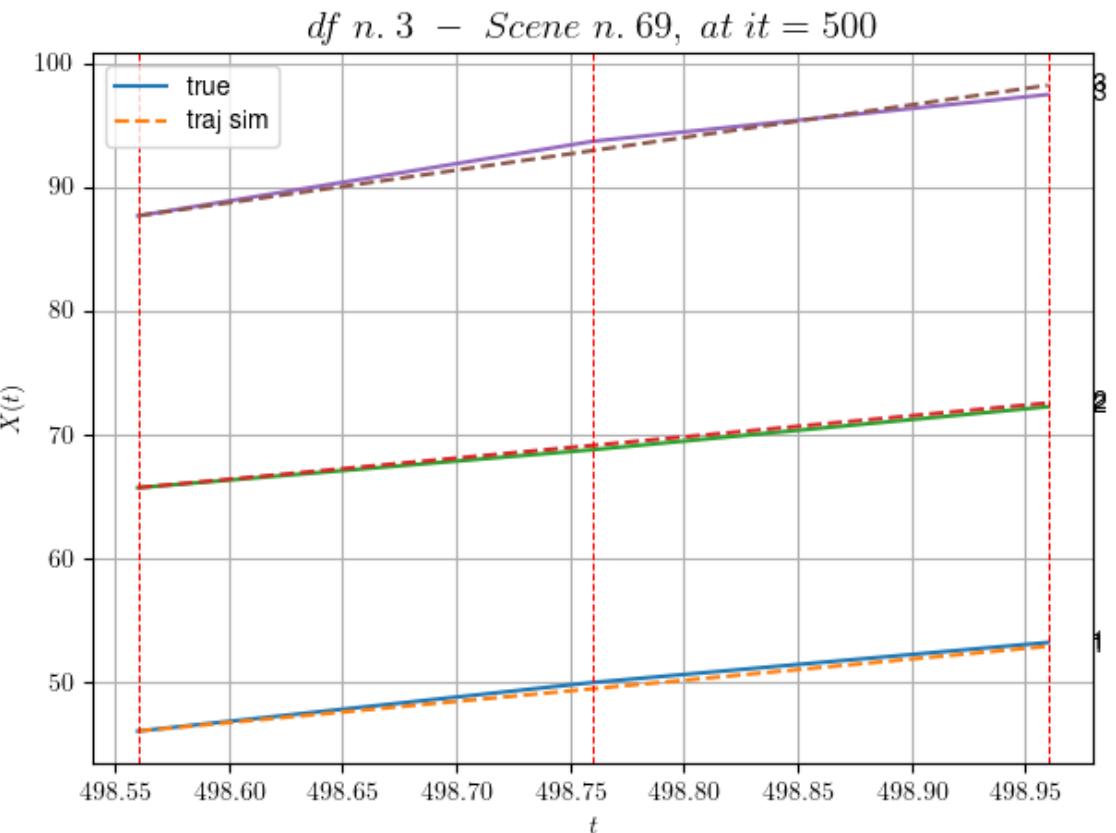
df n.3, scene n.69/90

We have 2 time intervals inside [498.56, 498.96]

- Time interval n.0: [498.56, 498.76]
 - * y_true: [19.66086018 15.38134444]
 - * v_ann: [17.14008903503418, 17.13208770751953, 26.404262964942674]
-

- Time interval n.1: [498.76, 498.96]
 - * y_true: [16.17082592 17.38167269]
 - * v_ann: [17.162338256835938, 17.14379119873047, 26.404262964942674]
-

- * err= 0.18746214160102434
- * Learning rate NN = 3.6449993785936385e-05
- * diff = 8.66638007874232e-05



For scene 69/90

- * use LR_NN=5e-05 with err=0.8318401052620209 at it=24
 - * v0_scn_mean = 26.62000702560549
 - * MAE = 0.18746214160102434
-
-

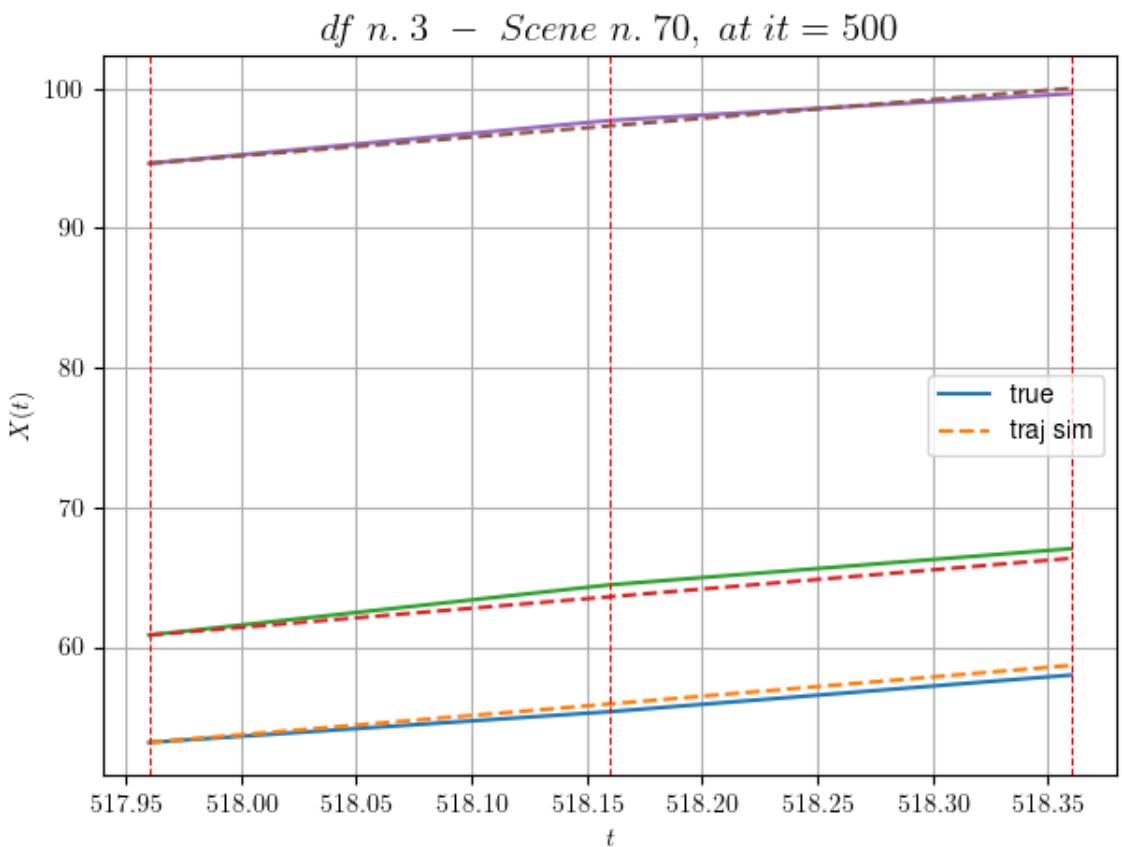
df n.3, scene n.70/90

We have 2 time intervals inside [517.96, 518.36]

- Time interval n.0: [517.96, 518.16]
 - * y_true: [11.01062169 17.99135838]
 - * v_ann: [13.779366493225098, 13.719922065734863, 1 3.435738688973165]
-

- Time interval n.1: [518.16, 518.36]
 - * y_true: [13.11081201 12.94110202]
 - * v_ann: [13.802876472473145, 13.76125717163086, 1 3.435738688973165]
-

* err= 0.2546815417273999
 * Learning rate NN = 3.6449993785936385e-05
 * diff = 0.0008933138208820912



For scene 70/90

- * use LR_NN=5e-05 with err=7.713690356009219 at it=24
 - * v0 scn_mean = 14.429593623935666
 - * MAE = 0.2546815417273999
-
-

df n.3, scene n.71/90

We have 4 time intervals inside [527.36, 528.16]

- Time interval n.0: [527.36, 527.56]
 - * y_true: [14.45064103 23.0016556]

```

* v_ann: [16.742830276489258, 16.78046226501465, 1
6.920906022775544]

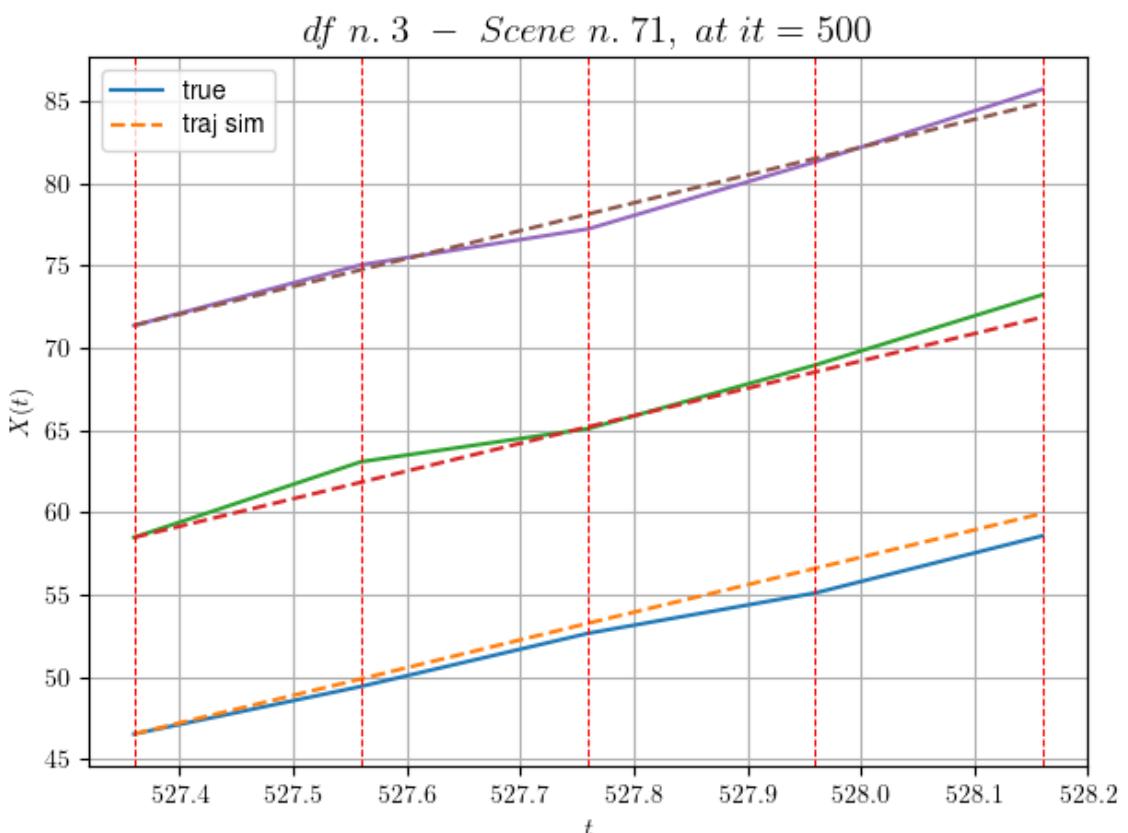
-----
- Time interval n.1: [527.56, 527.76]
* y_true: [16.14079976 10.04077962]
* v_ann: [16.912067413330078, 16.84124183654785, 1
6.920906022775544]

-----
- Time interval n.2: [527.76, 527.96]
* y_true: [12.25068777 19.3317022 ]
* v_ann: [16.669713973999023, 16.65829086303711, 1
6.920906022775544]

-----
- Time interval n.3: [527.96, 528.16]
* y_true: [17.36107311 21.34208771]
* v_ann: [16.679662704467773, 16.623029708862305, 1
6.920906022775544]

* err= 0.6589832867501175
* Learning rate NN = 4.7829678806010634e-05
* diff = 0 00012754708168430501

```



For scene 71/90
* use LR_NN=0.0001 with err=14.098527330405124 at it=24
* v0_scn_mean = 17.705651074186022
* MAE = 0.6587651573152478

df n.3, scene n.72/90

We have 3 time intervals inside [530.36, 530.96]

- Time interval n.0: [530.36, 530.56]

* y_true: [16.07060164 26.13260896]

* v_ann: [19.725099563598633, 19.644189834594727, 1
8.0548551527838]

- Time interval n.1: [530.56, 530.76]

* y_true: [15.14064363 18.85215172]

* v_ann: [19.946331024169922, 19.78499412536621, 1
8.0548551527838]

- Time interval n.2: [530.76, 530.96]

* y_true: [16.69081323 25.36324467]

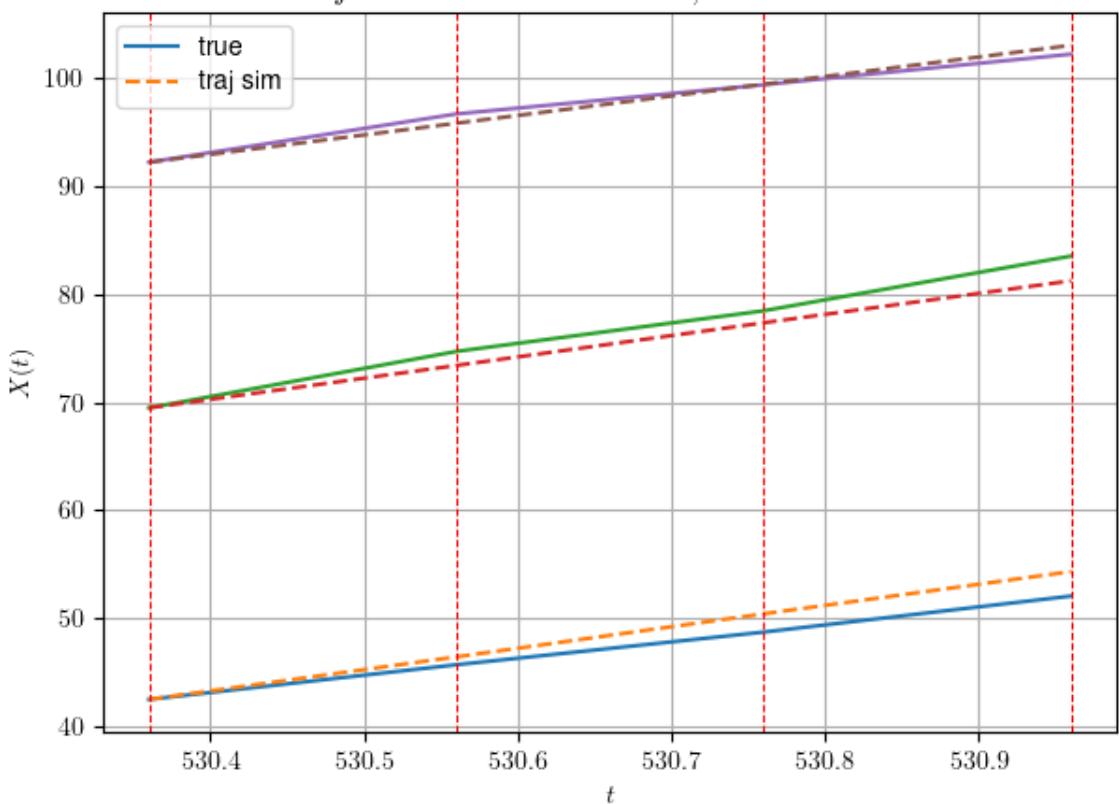
* v_ann: [19.578655242919922, 19.448942184448242, 1
8.0548551527838]

* err= 1.5120525234215867

* Learning rate NN = 5.904899080633186e-05

* diff = 0.007659104671472461

df n. 3 – Scene n. 72, at it = 500



For scene 72/90

```
* use LR_NN=0.0001 with err=10.976595910561501 at it=24
* v0_scn_mean = 18.77156330730561
* MAE = 1.5120525234215867
```

```
=====
```

df n.3, scene n.73/90

```
=====
```

```
We have 6 time intervals inside [576.56,577.76]
- Time interval n.0: [576.56, 576.76]
  * y_true: [22.12000755 22.50086521]
  * v_ann: [22.869035720825195, 22.852174758911133, 2
1.516688146760895]
```

```
-----
```

```
- Time interval n.1: [576.76, 576.96]
  * y_true: [22.90003133 17.69083 ]
  * v_ann: [22.830699920654297, 22.8270206451416, 21.
516688146760895]
```

```
-----
```

```
- Time interval n.2: [576.96, 577.16]
  * y_true: [24.57008129 24.8113942 ]
  * v_ann: [22.655271530151367, 22.70799446105957, 2
1.516688146760895]
```

```
-----
```

```
- Time interval n.3: [577.16, 577.36]
  * y_true: [26.44016601 28.10183764]
  * v_ann: [22.79058074951172, 22.800457000732422, 2
1.516688146760895]
```

```
-----
```

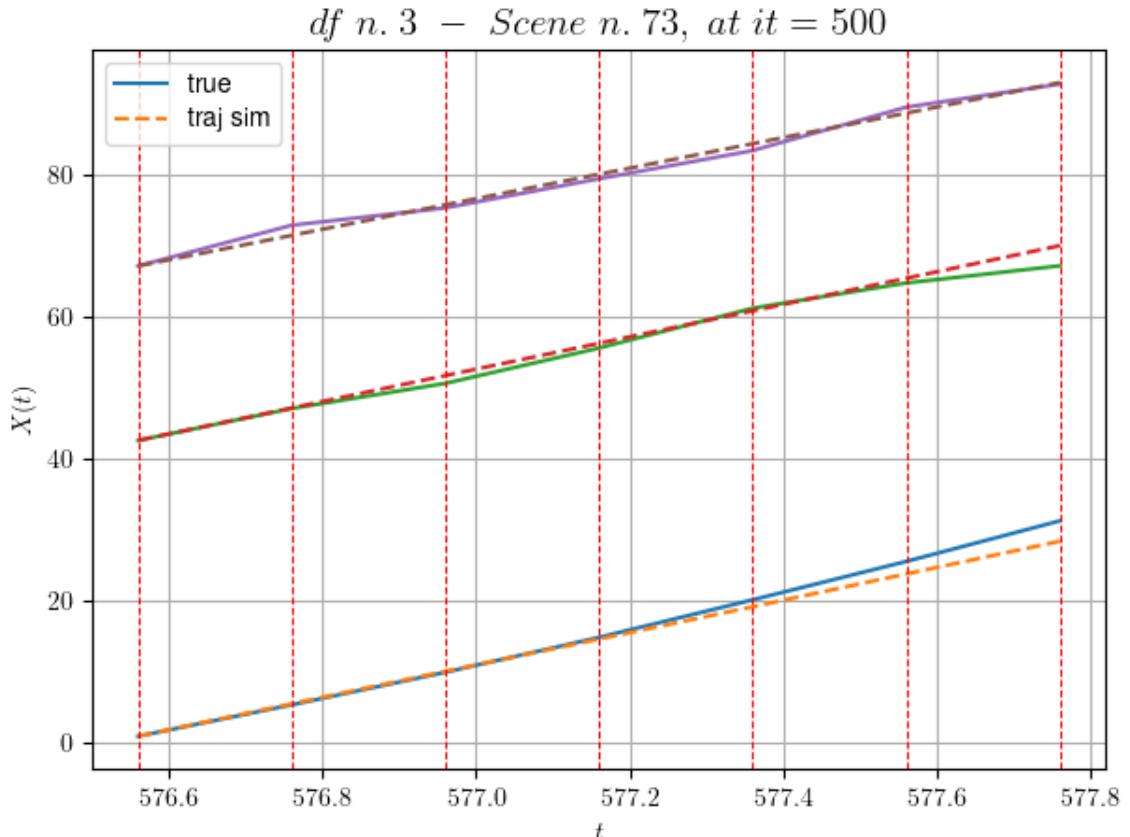
```
- Time interval n.4: [577.36, 577.56]
  * y_true: [27.01028631 17.73134123]
  * v_ann: [23.09170913696289, 22.98983383178711, 21.
516688146760895]
```

```
-----
```

```
- Time interval n.5: [577.56, 577.76]
  * y_true: [28.59045436 12.12102827]
  * v_ann: [23.0379638671875, 22.973003387451172, 21.
516688146760895]
```

```
-----
```

```
* err= 1.2883321167073873
* Learning rate NN = 1.5690524378442205e-05
* diff = 0.006051802352452285
```



For scene 73/90

```
* use LR_NN=5e-05 with err=19.755577053507242 at it=24
* v0_scn_mean = 22.02568647707387
* MAE = 1.1002110384449915
```

df n.3, scene n.74/90

We have 5 time intervals inside [579.56, 580.56]

- Time interval n.0: [579.56, 579.76]
 - * y_true: [21.03058275 42.18516565]
 - * v_ann: [26.49732780456543, 26.087238311767578, 2
 - 5.358404463470407]

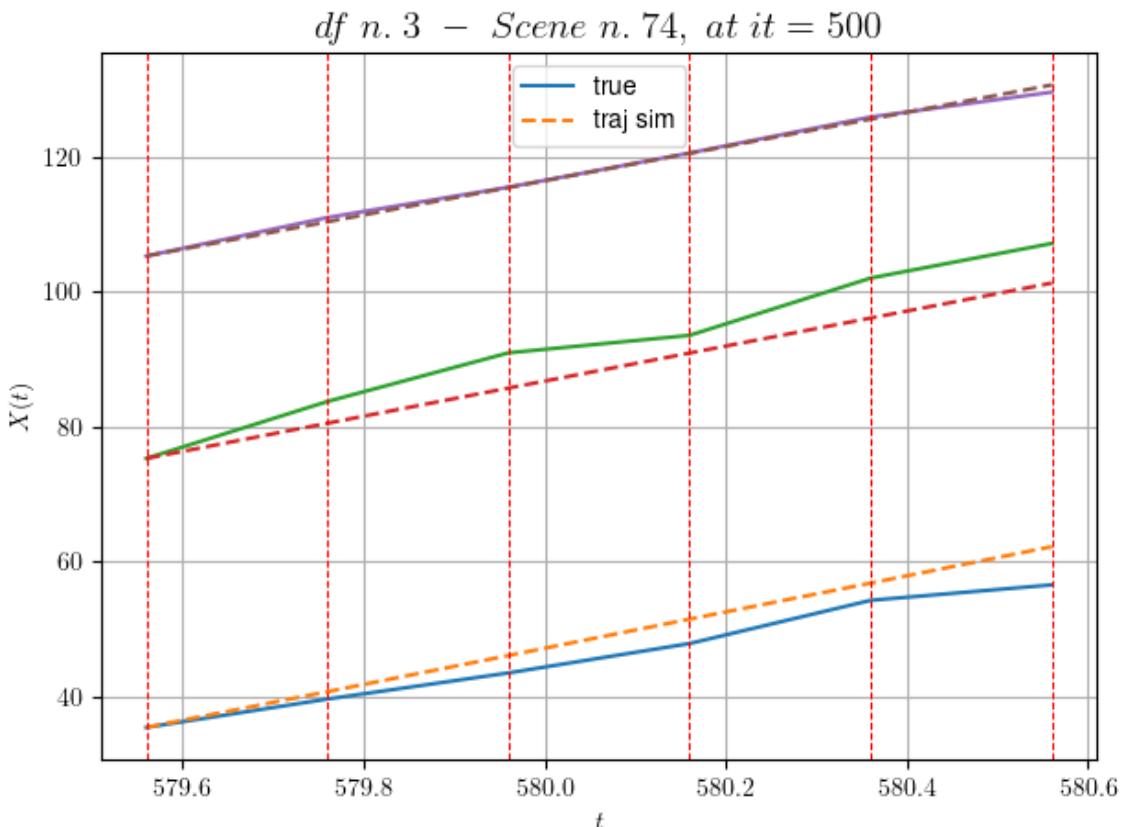
- Time interval n.1: [579.76, 579.96]
 - * y_true: [19.36065083 36.06520173]
 - * v_ann: [26.790252685546875, 26.05253791809082, 2
 - 5.358404463470407]

- Time interval n.2: [579.96, 580.16]
 - * y_true: [21.76088956 12.96224398]
 - * v_ann: [26.965938568115234, 25.950807571411133, 2
 - 5.358404463470407]

```
- Time interval n.3: [580.16, 580.36]
  * y_true: [32.02164742 42.42773504]
  * v_ann: [26.671632766723633, 25.920499801635742, 2
5.358404463470407]
```

```
- Time interval n.4: [580.36, 580.56]
  * y_true: [11.44064385 25.66536311]
  * v_ann: [27.021188735961914, 25.944143295288086, 2
5.358404463470407]
```

```
* err= 9.739535060079126
* Learning rate NN = 3.874203684972599e-06
* diff = 0.04431623467524659
```



For scene 74/90

```
* use LR_NN=1e-05 with err=37.317685319518404 at it=24
* v0_scn_mean = 25.636899987265046
* MAE = 9.739535060079126
```

df n.3. scene n.75/90

```
We have 4 time intervals inside [592.16,592.96]
- Time interval n.0: [592.16, 592.36]
  * y_true: [ 4.45046478 21.56401461]
  * y_ANN: [15.806669235229492, 15.825977325439453, 2]
```

4.70998074865545]

- Time interval n.1: [592.36, 592.56]
 - * y_true: [14.40168088 21.61284101]
 - * v_ann: [14.178993225097656, 14.800209999084473, 2

4.70998074865545]

- Time interval n.2: [592.56, 592.76]
 - * y_true: [14.40168088 22.933287]
 - * v_ann: [14.228103637695312, 15.977800369262695, 2

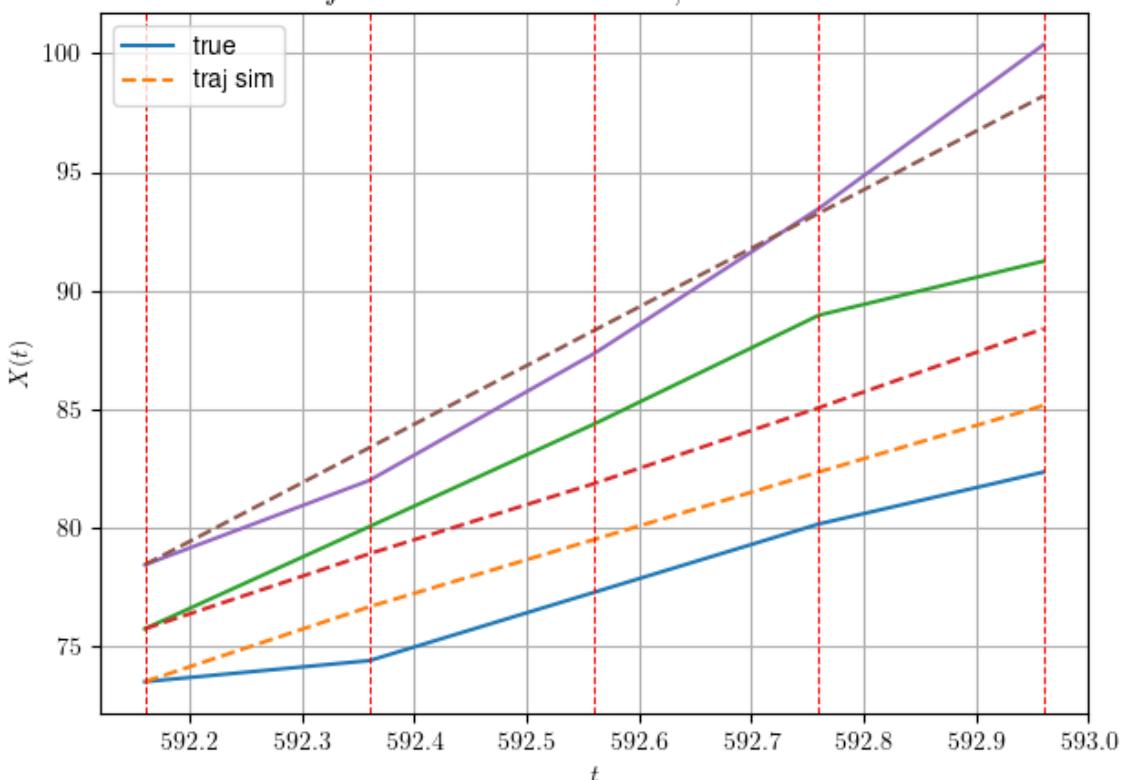
4.70998074865545]

- Time interval n.3: [592.76, 592.96]
 - * y_true: [10.94538603 11.39186219]
 - * v_ann: [14.007682800292969, 16.66139030456543, 2

4.70998074865545]

- * err= 4.086156042522705
- * Learning rate NN = 0.000478296831715852
- * diff = 0.04551442482982626

df n. 3 – Scene n. 75, at it = 500



For scene 75/90

- * use LR_NN=0.001 with err=14.135323119420491 at it=24
- * v0_scn_mean = 25.027381666226187
- * MAE = 3.5837283702266443

df n.3, scene n.76/90

We have 2 time intervals inside [21.56, 21.96]

- Time interval n.0: [21.56, 21.76]

* y_true: [26.48927836 26.93283237 27.60013316]

* v_ann: [24.62033462524414, 24.421926498413086, 2

4.729331970214844, 29.083658399938827]

- Time interval n.1: [21.76, 21.96]

* y_true: [24.19440937 24.35304119 22.73494812]

* v_ann: [26.058692932128906, 26.33677101135254, 2

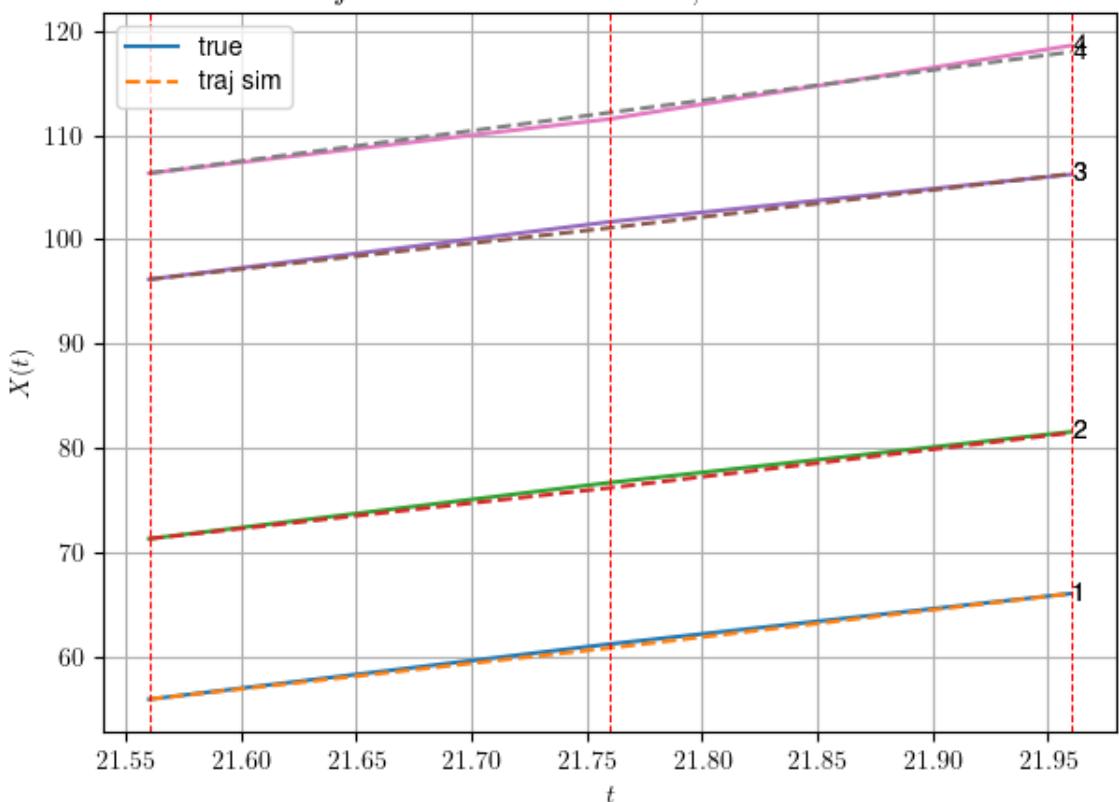
5.894624710083008, 29.083658399938827]

* err= 0.12407146699986332

* Learning rate NN = 0.00036449998151510954

* diff = 3.455360194082324e-07

df n. 3 – Scene n. 76, at it = 500



For scene 76/90

* use LR_NN=0.0005 with err=3.698765484311364 at it=24

* v0_scn_mean = 29.156962746047046

* MAE = 0.12225748901120864

df n.3, scene n.77/90

We have 3 time intervals inside [31.36,31.96]

- Time interval n.0: [31.36, 31.56]

- * y_true: [24.92105739 19.11766565 26.56610692]

- * v_ann: [2.959571129834693e-11, 21.78424835205078, 8.924079709316796e-25, 30.917174059156046]

- Time interval n.1: [31.56, 31.76]

- * y_true: [24.72130541 29.91666352 24.00857353]

- * v_ann: [1.9096048353706152e-10, 25.75486946105957, 9.822874298137145e-25, 30.917174059156046]

- Time interval n.2: [31.76, 31.96]

- * y_true: [24.58151426 8.80091982 33.80389928]

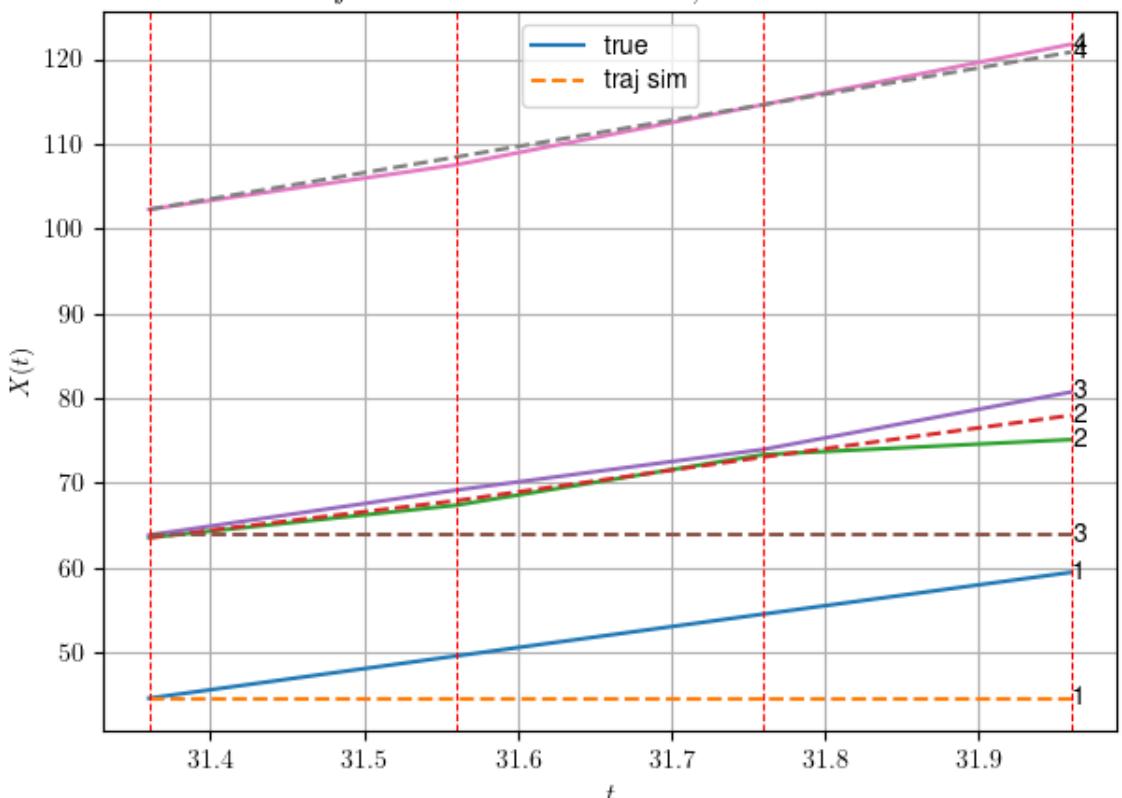
- * v_ann: [3.64624927473578e-11, 24.593196868896484, 2.4989021147110072e-26, 30.917174059156046]

- * err= 48.0857818522638

- * Learning rate NN = 0.0005904899444431067

- * diff = 0.00033066954941318727

df n. 3 – Scene n. 77, at it = 500



For scene 77/90

- * use LR_NN=0.001 with err=15.35149448485154 at it=24

- * v0_scn_mean = 30.84380311902917

- * MAE = 6.7233029370665225

```
=====
=====
```

df n.3, scene n.78/90

```
=====
=====
```

We have 3 time intervals inside [33.76,34.36]

- Time interval n.0: [33.76, 33.96]

- * y_true: [24.27120267 28.75319668 39.53553599]

- * v_ann: [5.600911661546304e-12, 0.0266306046396493
9, 6.8888458305826905e-12, 24.315647482967385]

```
-----
```

- Time interval n.1: [33.96, 34.16]

- * y_true: [18.63110748 26.36338094 39.47623422]

- * v_ann: [1.6963732935720843e-12, 0.001227641128934
9198, 7.739247576132868e-10, 24.315647482967385]

```
-----
```

- Time interval n.2: [34.16, 34.36]

- * y_true: [25.20172426 27.37399424 29.73574355]

- * v_ann: [2.0786656087807415e-13, 3.48013018083293e
-05, 3.311919982706968e-08, 24.315647482967385]

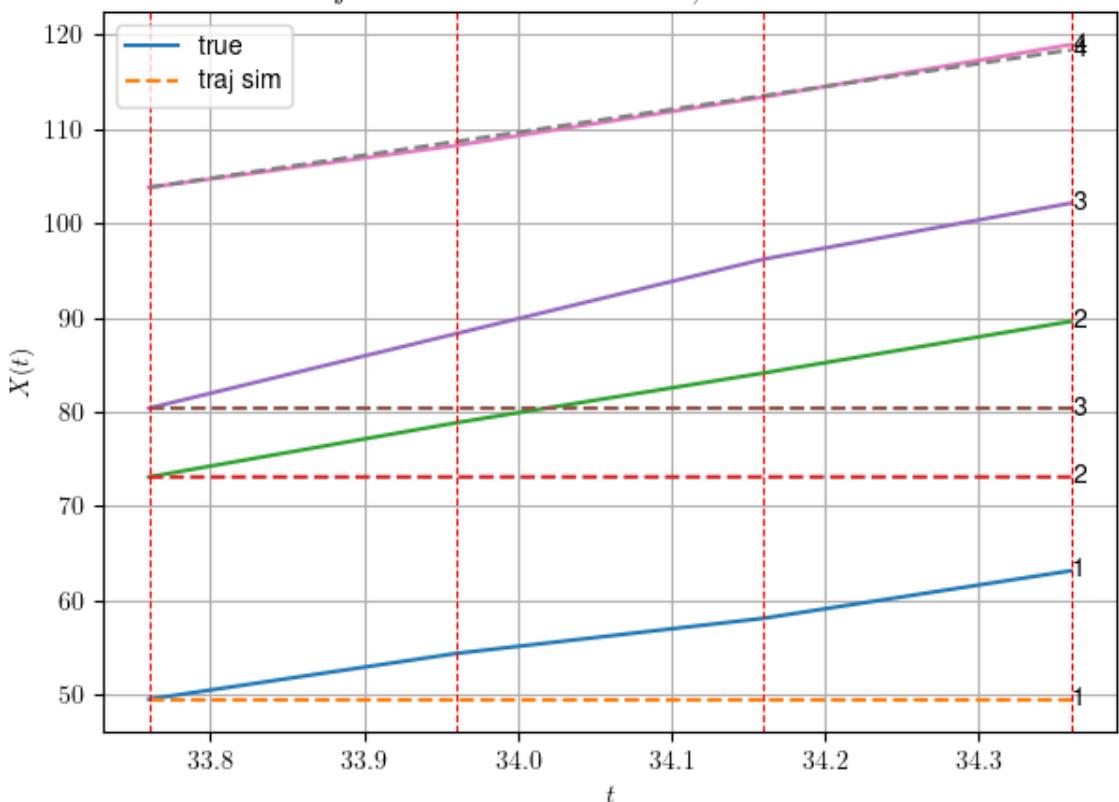
```
-----
```

- * err= 93.43135922552982

- * Learning rate NN = 0.0002952449722215533

- * diff = 0.005724094071069885

df n. 3 – Scene n. 78, at it = 500



For scene 78/90

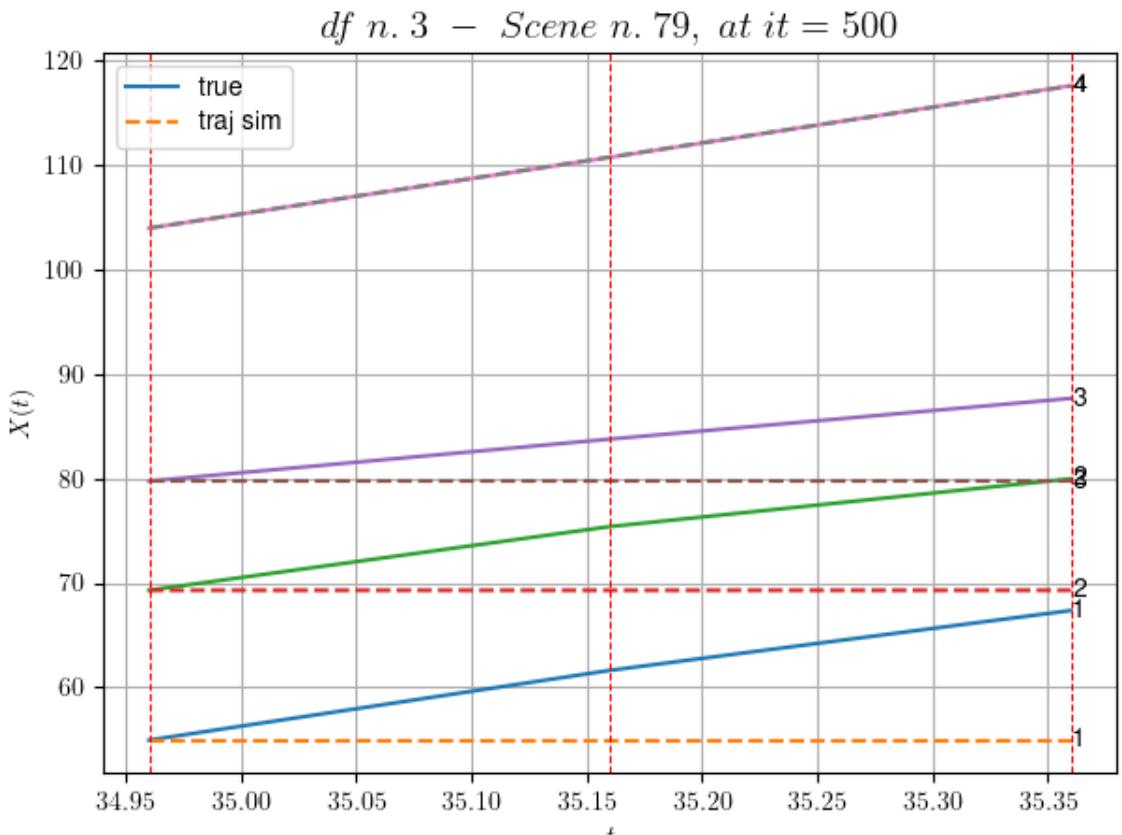
```
* use LR_NN=0.0005 with err=14.557856135623842 at it=24
* v0_scn_mean = 24.77037718669547
* MAE = 93.43135922552982
```

df n.3, scene n.79/90

```
We have 2 time intervals inside [34.96,35.36]
- Time interval n.0: [34.96, 35.16]
  * y_true: [33.40218228 30.49313647 20.11252108]
  * v_ann: [2.0252580270607723e-06, 0.000377289688913
1516, 3.5818598521225598e-12, 34.04452453089863]
```

```
- Time interval n.1: [35.16, 35.36]
  * y_true: [28.66899207 22.90260208 19.5026699 ]
  * v_ann: [4.419508513819892e-06, 0.0061758295632898
81, 8.90184939108217e-14, 34.04452453089863]
```

```
* err= 35.74225070472794
* Learning rate NN = 3.6449993785936385e-05
* diff = 3.2692443312498654e-05
```



For scene 79/90

```
* use LR_NN=5e-05 with err=9.600038105742598 at it=24
* v0_scn_mean = 33.720975729844184
* MAE = 35.74225070472794
```

```
=====
=====
```

df n.3, scene n.80/90

```
=====
=====
```

We have 6 time intervals inside [83.36,84.56]

- Time interval n.0: [83.36, 83.56]
 - * y_true: [27.1108197 22.97496526 13.79424223]
 - * v_ann: [1.5893436674185823e-34, 1.043406872014429

6e-08, 0.004233567975461483, 26.10772419731459]

```
-----
```

- Time interval n.1: [83.56, 83.76]

- * y_true: [28.73111951 35.1785896 26.83859352]
- * v_ann: [4.4139881749999014e-34, 1.004980703100955

e-07, 0.001769693335518241, 26.10772419731459]

```
-----
```

- Time interval n.2: [83.76, 83.96]

- * y_true: [29.25142438 34.77932949 18.27648805]
- * v_ann: [9.004120849433787e-35, 7.865334055168205e

-07, 0.00016576364578213543, 26.10772419731459]

```
-----
```

- Time interval n.3: [83.96, 84.16]

- * y_true: [27.70171969 23.46694627 45.36715188]
- * v_ann: [2.3028545612629914e-35, 4.609704046742990

6e-05, 5.677437366102822e-05, 26.10772419731459]

```
-----
```

- Time interval n.4: [84.16, 84.36]

- * y_true: [26.72197507 21.43687952 37.53588876]
- * v_ann: [6.545923963546224e-35, 2.077349279261398e

-07, 0.018464582040905952, 26.10772419731459]

```
-----
```

- Time interval n.5: [84.36, 84.56]

- * y_true: [31.24277517 29.71036516 28.7233215]
- * v_ann: [2.425467289028706e-34, 3.923082747547824e

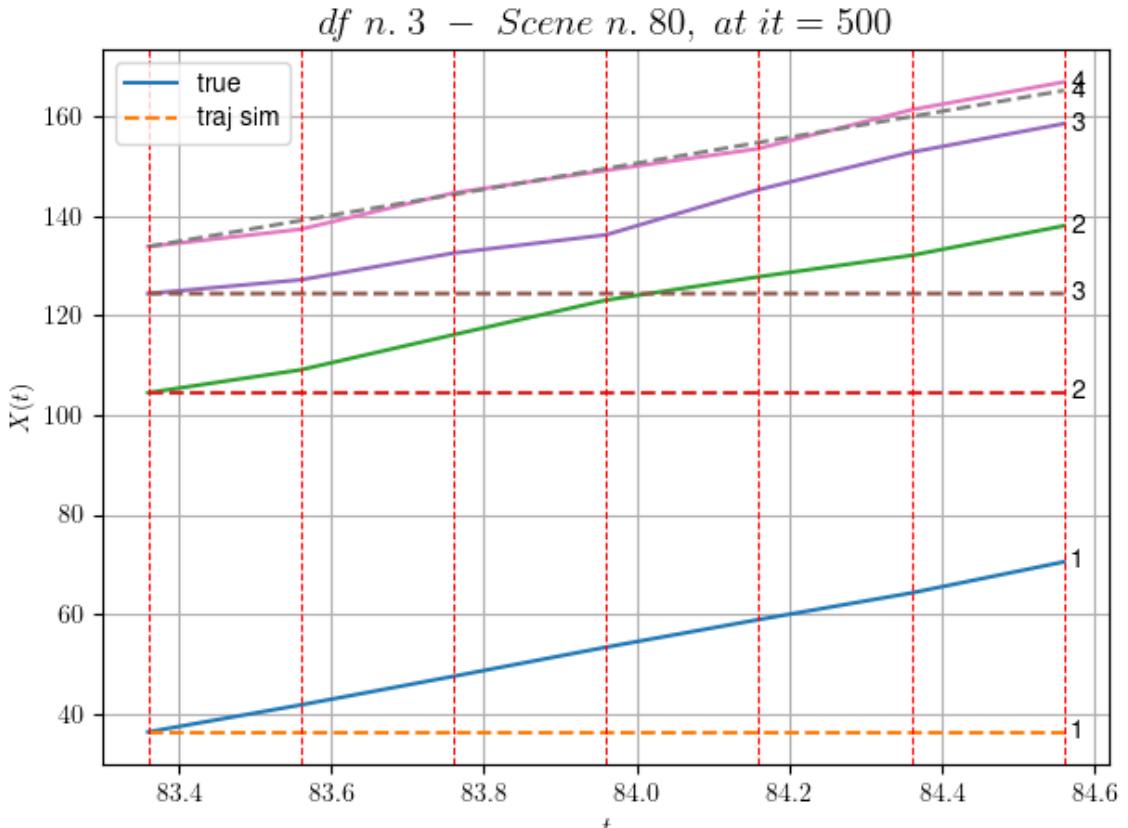
-09, 0.013070772401988506, 26.10772419731459]

```
-----
```

* err= 301.71673585281974

* Learning rate NN = 3.138104875688441e-05

* ::::: ^ nnnnnnnnnnnnnnnn



For scene 80/90

- * use LR_NN=0.0001 with err=113.68970298948739 at it=24
- * v0_scn_mean = 26.419093595549377
- * MAE = 301.69677708208803

df n.3, scene n.81/90

We have 3 time intervals inside [94.36, 94.96]

- Time interval n.0: [94.36, 94.56]
 - * y_true: [33.70387327 38.57908217 21.70251029]
 - * v_ann: [29.639230728149414, 30.00867462158203, 2 9.292896270751953, 29.526156065335126]

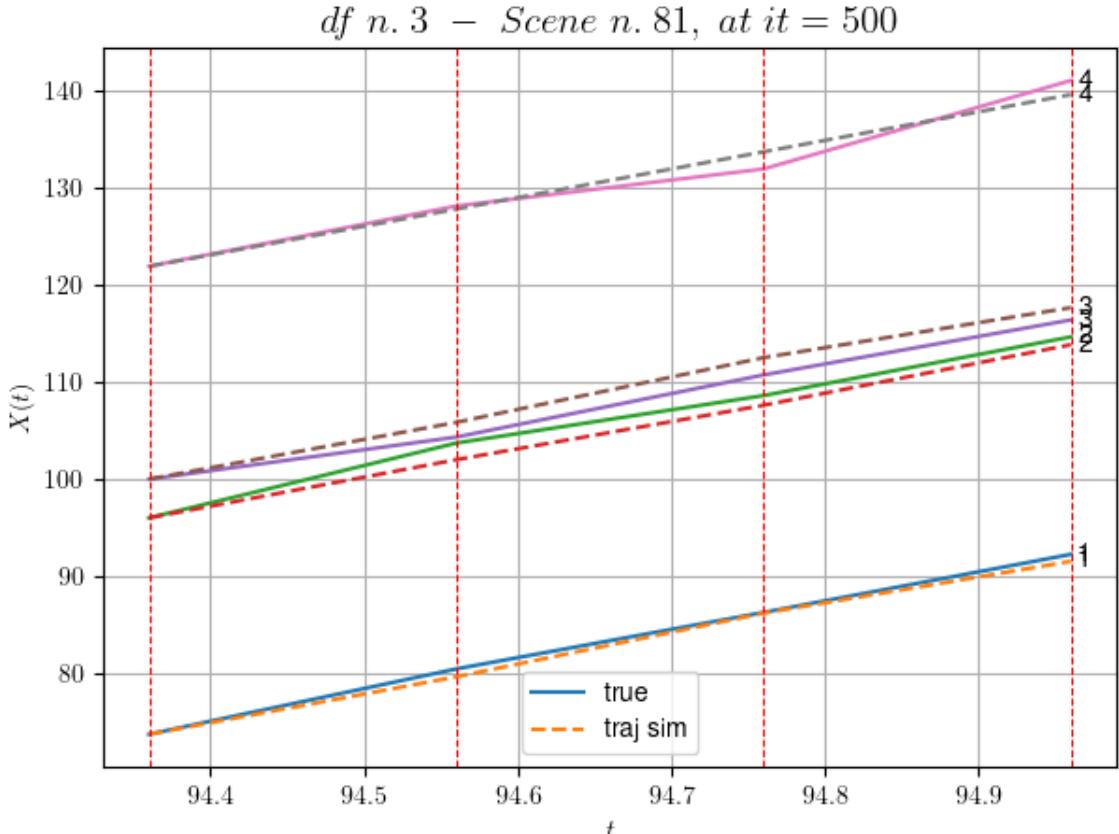
- Time interval n.1: [94.56, 94.76]
 - * y_true: [29.14386677 24.50535727 32.05702124]
 - * v_ann: [32.826045989990234, 28.09197235107422, 3 3.38423156738281, 29.526156065335126]

- Time interval n.2: [94.76, 94.96]
 - * y_true: [29.96461386 30.28702151 28.36707369]
 - * v_ann: [26.736896514892578, 31.235828399658203, 2 5.804407119750977, 29.526156065335126]

```

* err= 1.1375055290891112
* Learning rate NN = 0.0005904899444431067
* diff = 0 005308500188201471

```



For scene 81/90

```

* use LR_NN=0.001 with err=19.33783563084267 at it=24
* v0_scn_mean = 29.564062038157406
* MAE = 1.037454448827068

```

df n.3, scene n.82/90

We have 3 time intervals inside [142.16, 142.76]

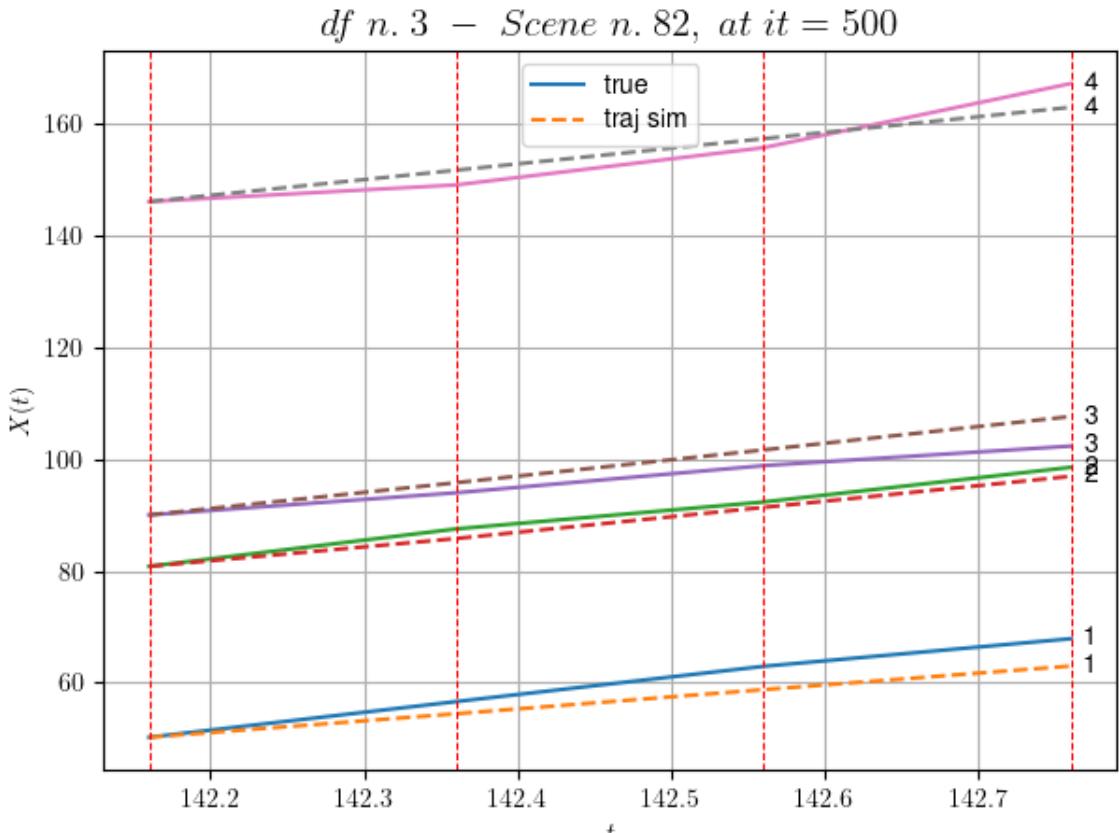
- Time interval n.0: [142.16, 142.36]
 - * y_true: [31.90177154 33.47450881 19.84324761]
 - * v_ann: [21.039419174194336, 24.885786056518555, 28.860315322875977, 28.12123774853792]

- Time interval n.1: [142.36, 142.56]
 - * y_true: [31.50218522 24.08376432 24.27420294]
 - * v_ann: [21.556392669677734, 27.83278465270996, 29.295490264892578, 28.12123774853792]

- Time interval n.2: [142.56, 142.76]
 - * y_true: [24.70204715 30.9853993 17.45337402]

```
* v_ann: [21.085479736328125, 27.790672302246094, 2
9.879364013671875, 28.12123774853792]
```

```
* err= 7.439757487116482
* Learning rate NN = 2.952449540316593e-05
* diff = 0.00644515605620042
```



For scene 82/90

```
* use LR_NN=5e-05 with err=33.10834961438555 at it=24
* v0_scn_mean = 28.271532614914054
* MAE = 7.439757487116482
```

df n.3, scene n.83/90

We have 2 time intervals inside [170.36, 170.76]

- Time interval n.0: [170.36, 170.56]
 - * y_true: [24.1106547 30.95205085 31.86307572]
 - * v_ann: [23.446653366088867, 27.040660858154297, 2
 5.93096160888672, 32.99653993565765]

- Time interval n.1: [170.56, 170.76]

- * y_true: [28.33103197 10.10076519 29.63331411]

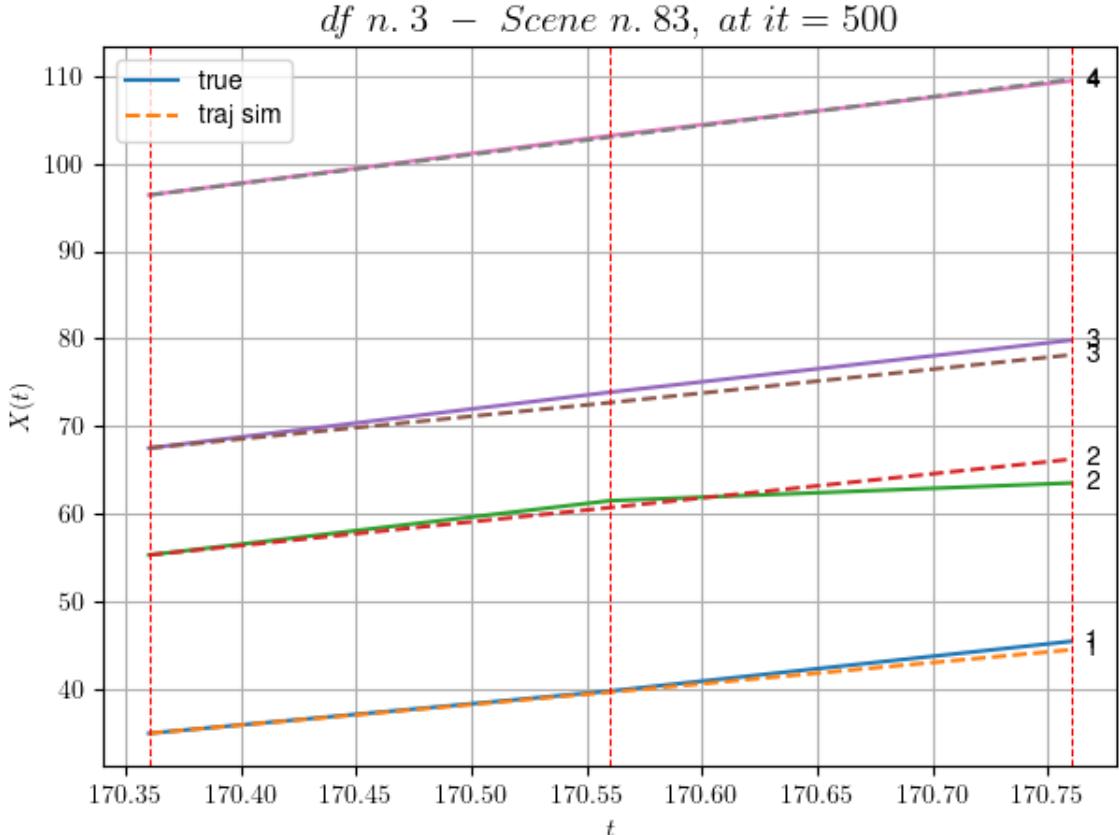
- * v_ann: [24.165313720703125, 27.526700973510742, 2

- 7.220260620117188, 32.99653993565765]

```

* err= 1.0938685172280662
* Learning rate NN = 7.289998757187277e-05
* diff = 0.09646310629026456

```



For scene 83/90

```

* use LR_NN=0.0001 with err=1.8788481166295459 at it=24
* v0_scn_mean = 32.75682649194204
* MAE = 0.8224780956678766

```

df n.3, scene n.84/90

We have 2 time intervals inside [248.16, 248.56]

- Time interval n.0: [248.16, 248.36]
 - * y_true: [31.21204442 24.6823336 32.34552948]
 - * v_ann: [31.028444290161133, 32.185577392578125, 31.372844696044922, 30.248970609827172]

- Time interval n.1: [248.36, 248.56]

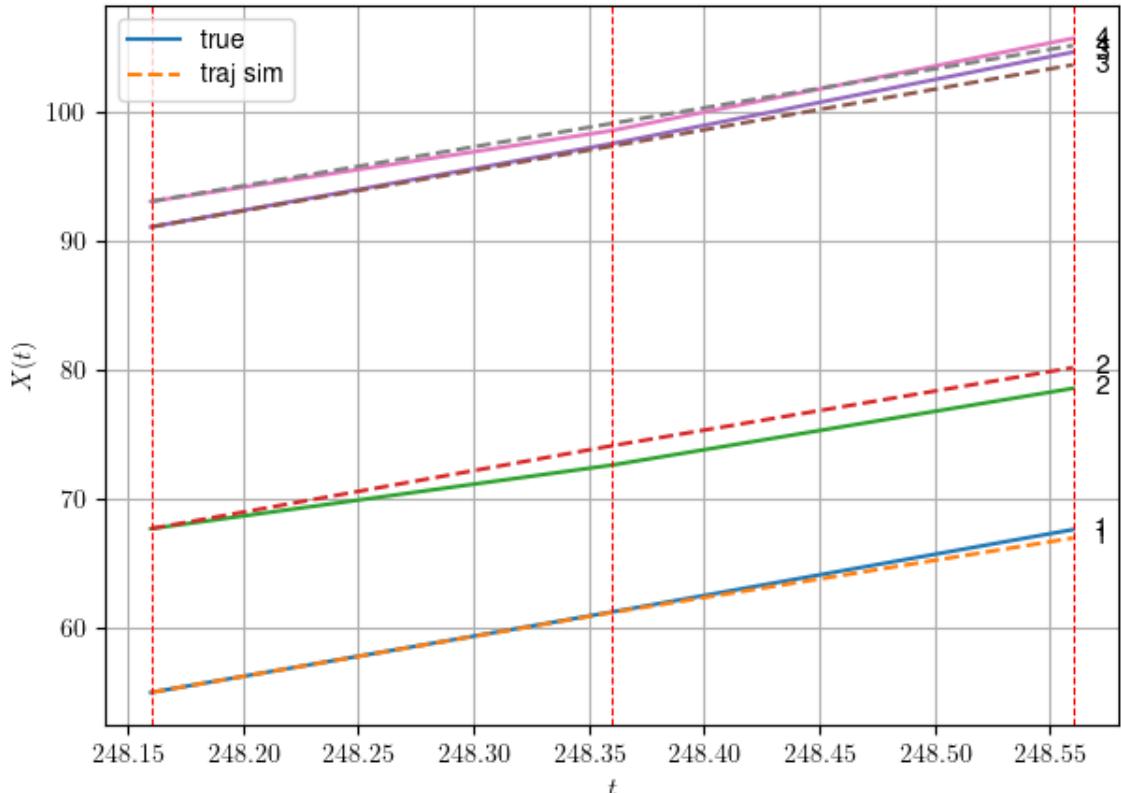
- * y_true: [31.9625999 29.77329807 35.48696999]
 - * v_ann: [28.87905502319336, 30.295442581176758, 31.529254913330078, 30.248970609827172]

* err= 0.5735324496683523

* Learning rate NN = 0.0007289999630302191

* diff = 0.001575176441245052

df n. 3 – Scene n. 84, at it = 500



For scene 84/90

* use LR_NN=0.001 with err=17.146905479564477 at it=24
 * v0_scn_mean = 30.229053771224375
 * MAE = 0.2842741016201261

df n.3, scene n.85/90

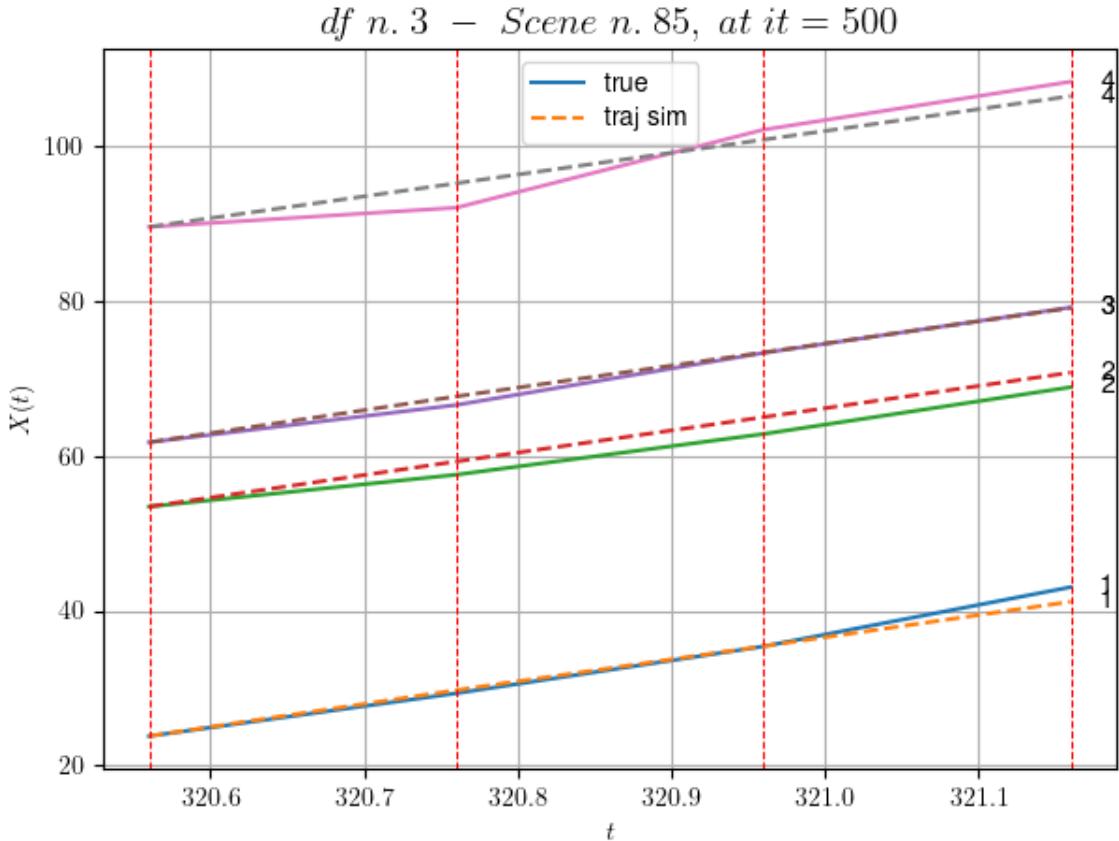
We have 3 time intervals inside [320.56, 321.16]

- Time interval n.0: [320.56, 320.76]
 - * y_true: [27.61038846 20.60122903 24.07186814]
 - * v_ann: [29.63987922668457, 29.113412857055664, 29.573020935058594, 28.130140949142127]

- Time interval n.1: [320.76, 320.96]
 - * y_true: [30.26064275 26.25184013 33.56317876]
 - * v_ann: [28.373008728027344, 28.613239288330078, 28.389156341552734, 28.130140949142127]

- Time interval n.2: [320.96, 321.16]
 - * y_true: [38.25114958 30.20253063 29.36323845]
 - * v_ann: [28.706146240234375, 28.753490447998047, 28.71994972229004, 28.130140949142127]

```
* err= 1.9455414879681876
* Learning rate NN = 5.904899080633186e-05
* diff = 0.0011158276887739405
```



For scene 85/90

```
* use LR_NN=0.0001 with err=8.225931675413388 at it=24
* v0_scn_mean = 28.279723588442206
* MAE = 1.668477950589301
```

df n.3, scene n.86/90

We have 3 time intervals inside [333.96, 334.56]

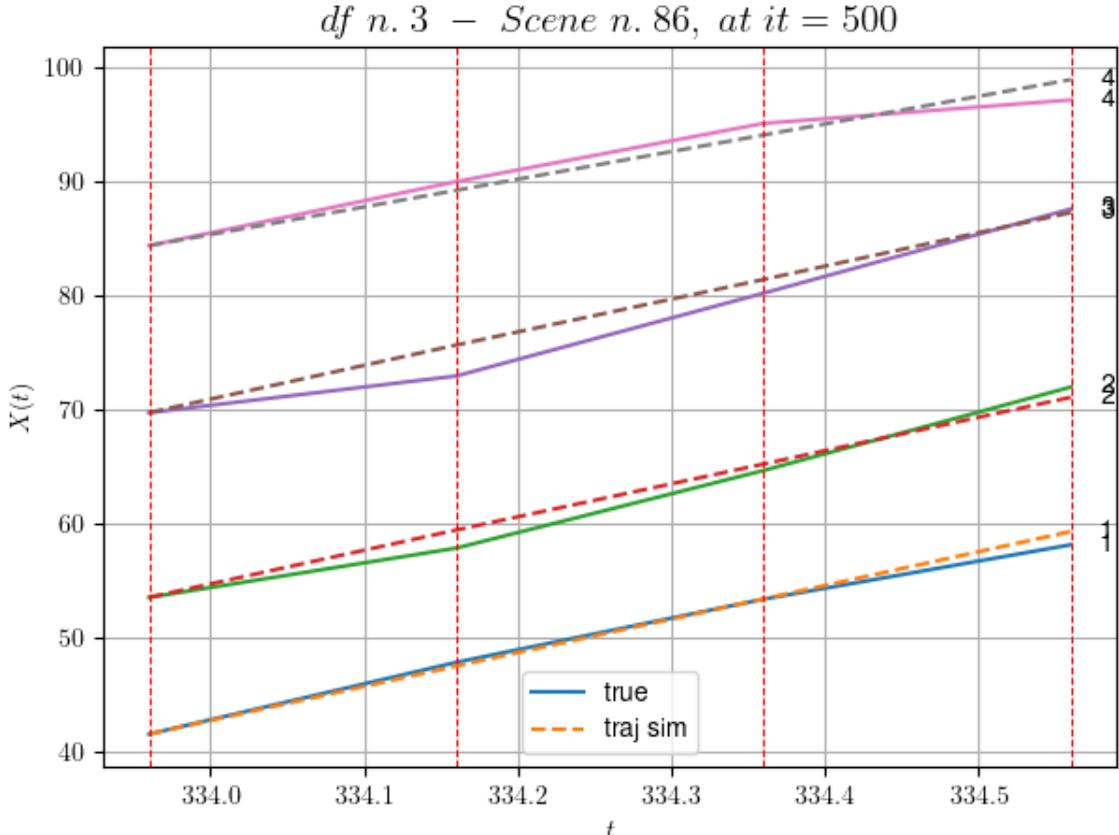
- Time interval n.0: [333.96, 334.16]
 - * y_true: [31.40121985 21.58136302 16.05156144]
 - * v_ann: [29.782411575317383, 29.504634857177734, 29.606964111328125, 24.218775367788055]

- Time interval n.1: [334.16, 334.36]
 - * y_true: [27.67132891 33.9725354 36.25406589]
 - * v_ann: [29.35693359375, 28.876100540161133, 28.69073486328125, 24.218775367788055]

- Time interval n.2: [334.36, 334.56]

```
* y_true: [23.81145278 36.52334008 36.85496039]  
* v_ann: [29.56020736694336, 29.22308921813965, 29.  
2752742767334, 24.218775367788055]
```

```
* err= 1.1715851023997996  
* Learning rate NN = 5.904899080633186e-05  
* diff = 0.0005252716665127027
```



For scene 86/90

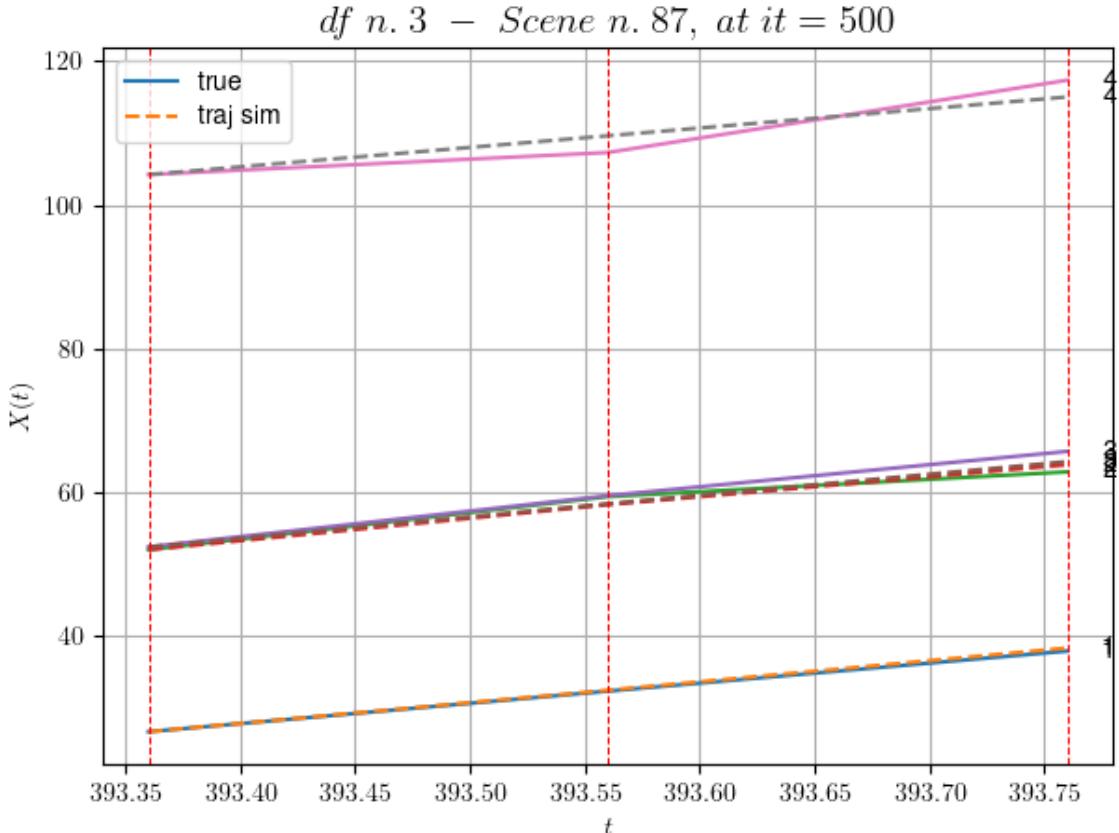
```
* use LR_NN=0.0001 with err=4.421570566039879 at it=24  
* v0_scn_mean = 24.681254525496094  
* MAE = 1.164426872442613
```

df n.3. scene n.87/90

```
We have 2 time intervals inside [393.36,393.76]
- Time interval n.0: [393.36, 393.56]
  * y_true: [28.21049617 36.91227562 35.66212709]
  * v_ann: [28.84107208251953, 31.296566009521484, 3
7693099975586, 27.00629353640573]
```

```
- Time interval n.1: [393.56, 393.76]
  * y_true: [27.89067116 17.24119841 30.82238865]
  * v_ann: [29.376502990722656, 27.872058868408203, 2
9.26909637451172, 27.00629353640573]
```

```
* err= 1.3843352768960842
* Learning rate NN = 7.289998757187277e-05
* diff = 0.00014706877536019292
```



For scene 87/90

```
* use LR_NN=0.0001 with err=14.928325294631858 at it=24
* v0_scn_mean = 27.245780311576212
* MAE = 1.1146671525882739
```

df n.3, scene n.88/90

We have 5 time intervals inside [521.76, 522.76]

- Time interval n.0: [521.76, 521.96]
 - * y_true: [10.54036018 15.07054541 11.30098461]
 - * v_ann: [15.986995697021484, 15.214797973632812, 1

5.976608276367188, 17.24778766704716]

- Time interval n.1: [521.96, 522.16]

* y_true: [20.11080333 12.92054275 19.50185752]

* v_ann: [15.950286865234375, 13.993791580200195, 1

4.977909088134766, 17.24778766704716]

- Time interval n.2: [522.16, 522.36]

```

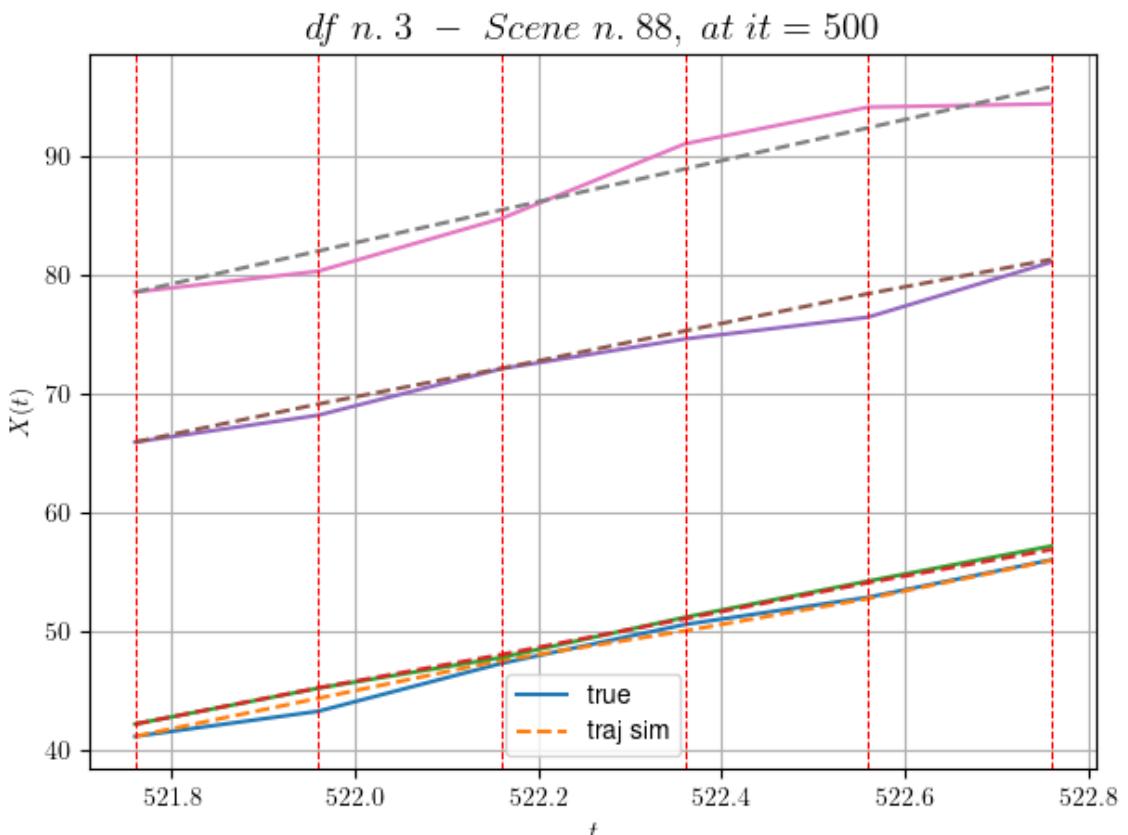
* y_true: [16.31074126 16.85079656 12.50130097]
* v_ann: [12.351151466369629, 15.035799026489258, 1
5.738364219665527, 17.24778766704716]

-----
- Time interval n.3: [522.36, 522.56]
* y_true: [11.43058292 15.20080004 9.15100954]
* v_ann: [13.53762435913086, 15.135451316833496, 1
5.621679306030273, 17.24778766704716]

-----
- Time interval n.4: [522.56, 522.76]
* y_true: [15.72089895 14.72089277 23.10276913]
* v_ann: [16.032318115234375, 13.91334342956543, 1
4.387267112731934, 17.24778766704716]

-----
* err= 0.8284590582052236
* Learning rate NN = 0.0003874204121530056
* diff = 0.0033407826236765414

```



For scene 88/90

```

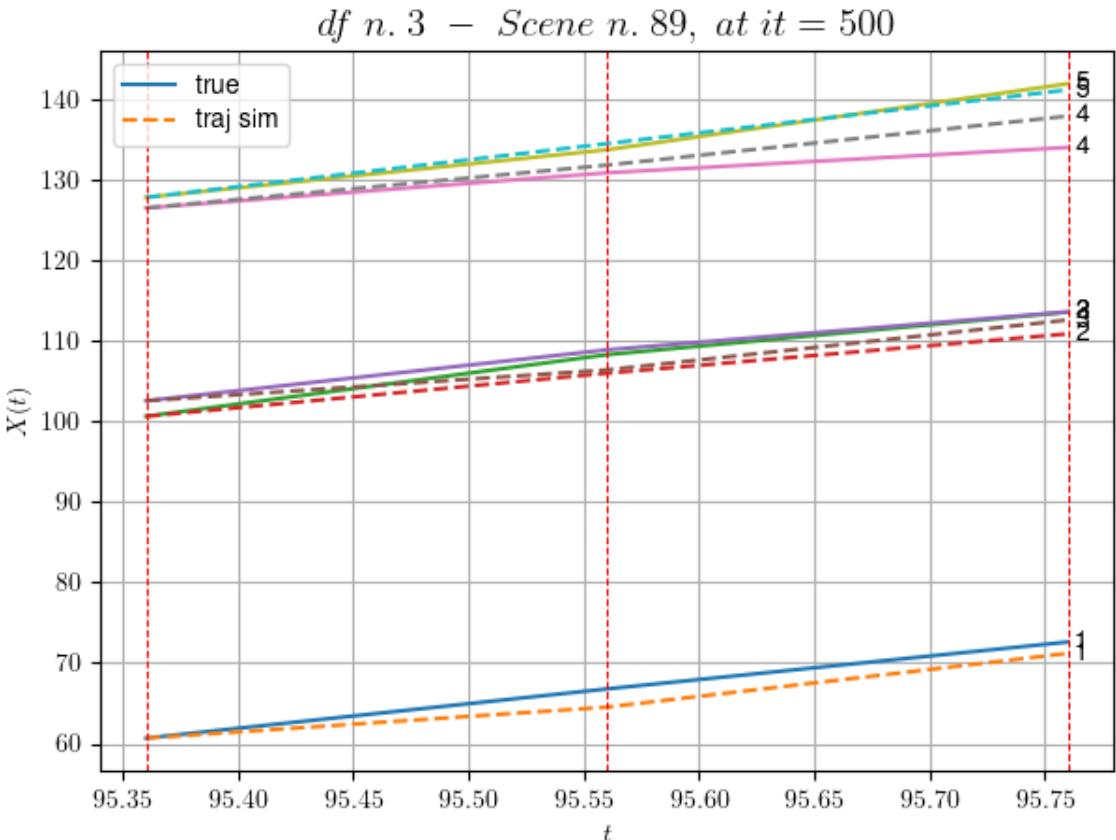
* use LR_NN=0.001 with err=29.040835376950838 at it=24
* v0_scn_mean = 18.267923156298444
* MAE = 0.822543092711485
=====
```

df n.3, scene n.89/90

```
=====
=====
We have 2 time intervals inside [95.36,95.76]
- Time interval n.0: [95.36, 95.56]
  * y_true: [30.52238998 38.21809619 31.62683865 21.8
1676128]
  * v_ann: [19.23186683654785, 26.753639221191406, 1
9.159889221191406, 26.57015609741211, 33.351374286980864]

-----
- Time interval n.1: [95.56, 95.76]
  * y_true: [29.11270185 26.43618159 23.59563306 15.7
3527867]
  * v_ann: [33.35572814941406, 24.414228439331055, 3
1.006240844726562, 30.451265335083008, 33.351374286980864]

-----
* err= 2.940733404408758
* Learning rate NN = 0.0007289999630302191
* diff = 0.00022318881609351138
```

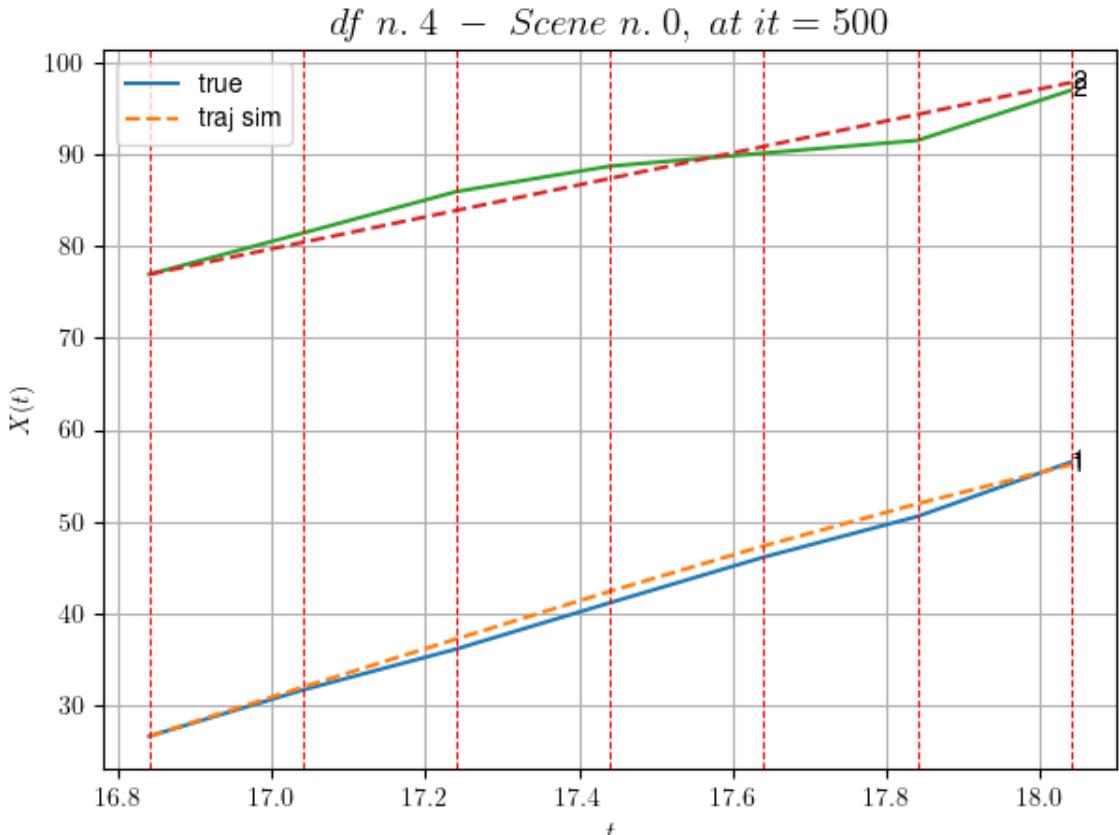


For scene 89/90

- * use LR_NN=0.001 with err=16.215884785983903 at it=24
- * v0_scn_mean = 33.01637687613961
- * MAE = 2.7278508936364587

For df=3 with 90 scenes, time taken: 1557.04

```
*****
*****  
*****  
*****  
In df n.4/10 we have 69 scenes  
df n.4, scene n.0/69  
=====  
=====  
=====  
We have 6 time intervals inside [16.84,18.04]  
- Time interval n.0: [16.84, 17.04]  
  * y_true: [25.23041912]  
  * v_ann: [26.762292861938477, 17.453813538109866]  
-----  
-----  
-----  
- Time interval n.1: [17.04, 17.24]  
  * y_true: [22.39048591]  
  * v_ann: [26.340003967285156, 17.453813538109866]  
-----  
-----  
-----  
- Time interval n.2: [17.24, 17.44]  
  * y_true: [25.25074327]  
  * v_ann: [26.012451171875, 17.453813538109866]  
-----  
-----  
-----  
- Time interval n.3: [17.44, 17.64]  
  * y_true: [24.88089915]  
  * v_ann: [24.778745651245117, 17.453813538109866]  
-----  
-----  
-----  
- Time interval n.4: [17.64, 17.84]  
  * y_true: [22.1909979]  
  * v_ann: [22.96675682067871, 17.453813538109866]  
-----  
-----  
-----  
- Time interval n.5: [17.84, 18.04]  
  * y_true: [29.72167451]  
  * v_ann: [21.350317001342773, 17.453813538109866]  
-----  
-----  
* err= 1.6215560241307192  
* Learning rate NN = 1.5690524378442205e-05  
* dfff = 0.005700112207744044
```



For scene 0/69

- * use LR_NN=5e-05 with err=47.39867445296443 at it=24
- * v0_scn_mean = 17.9556609964896
- * MAE = 1.6212962289848016

df n.4, scene n.1/69

We have 3 time intervals inside [59.84, 60.44]

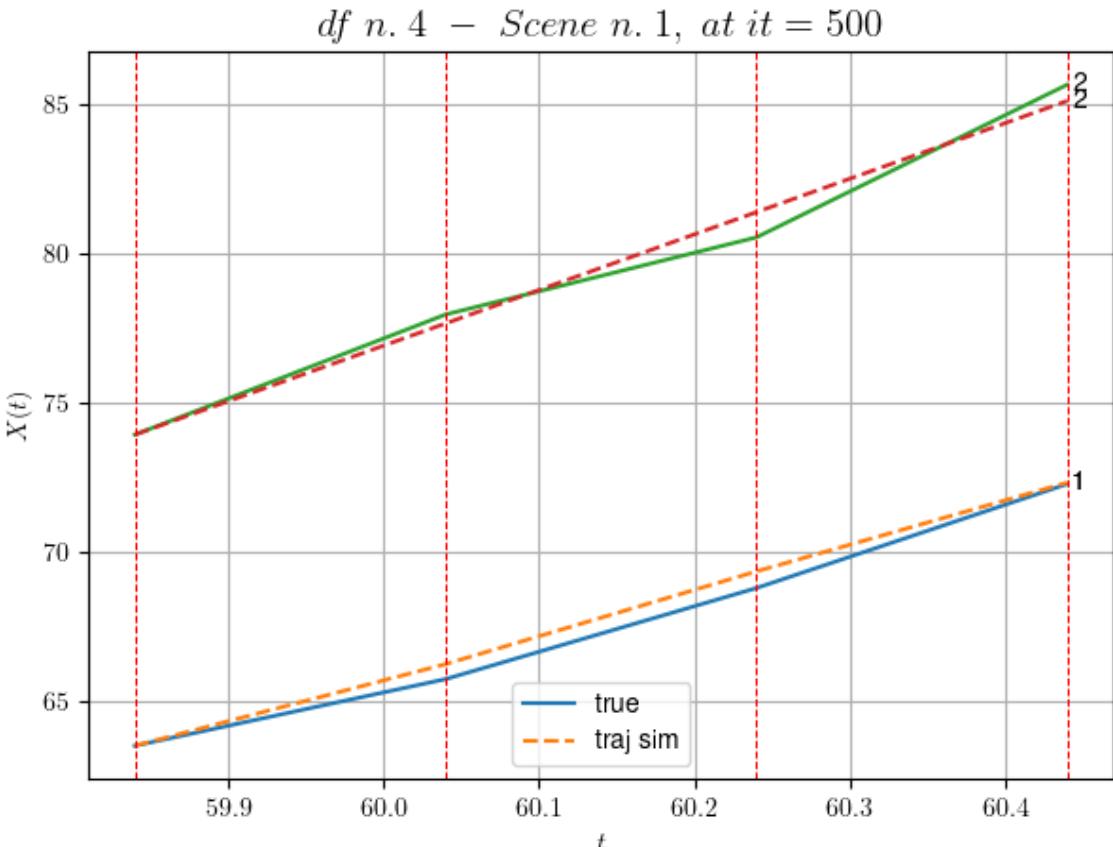
- Time interval n.0: [59.84, 60.04]
 - * y_true: [11.16089253]
 - * v_ann: [13.673985481262207, 18.625518273300347]

- Time interval n.1: [60.04, 60.24]
 - * y_true: [15.2413343]
 - * v_ann: [15.515067100524902, 18.625518273300347]

- Time interval n.2: [60.24, 60.44]
 - * y_true: [17.42164177]
 - * v_ann: [14.862872123718262, 18.625518273300347]

- * err= 0.207804849189133
- * Learning rate NN = 0.0002952449722215533

* diff = 4.492454678137192e-05



For scene 1/69

* use LR_NN=0.0005 with err=9.133386309983655 at it=24
 * v0_scn_mean = 19.08049754228143
 * MAE = 0.20699280753955906

df n.4, scene n.2/69

We have 3 time intervals inside [65.04, 65.64]

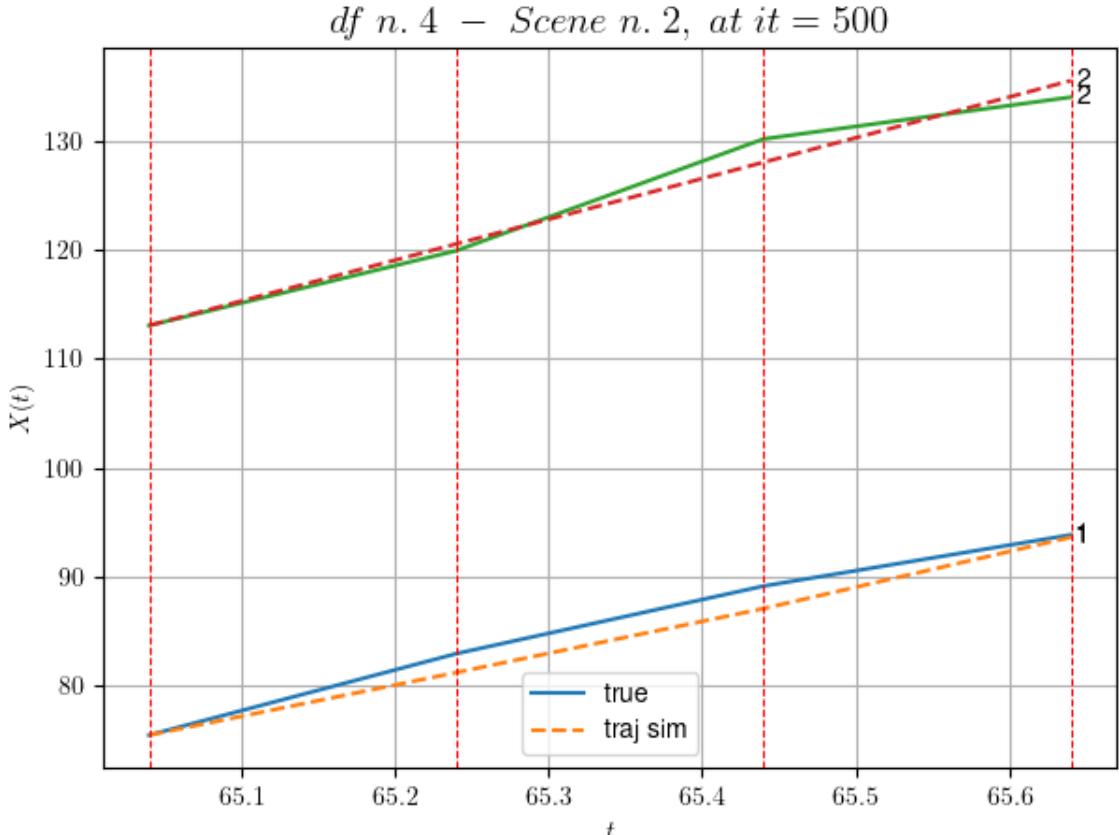
- Time interval n.0: [65.04, 65.24]
 - * y_true: [37.33460222]
 - * v_ann: [28.680341720581055, 37.41903742148329]

- Time interval n.1: [65.24, 65.44]
 - * y_true: [30.99428227]
 - * v_ann: [29.319007873535156, 37.41903742148329]

- Time interval n.2: [65.44, 65.64]
 - * y_true: [23.47378049]
 - * v_ann: [32.73357391357422, 37.41903742148329]

* err= 1.8200505805715212

* Learning rate NN = 2.952449540316593e-05
 * diff = 6.117683005690822e-05



For scene 2/69

* use LR_NN=5e-05 with err=5.5351808317415445 at it=24
 * v0_scn_mean = 37.12227592468067
 * MAE = 1.8142340268137924

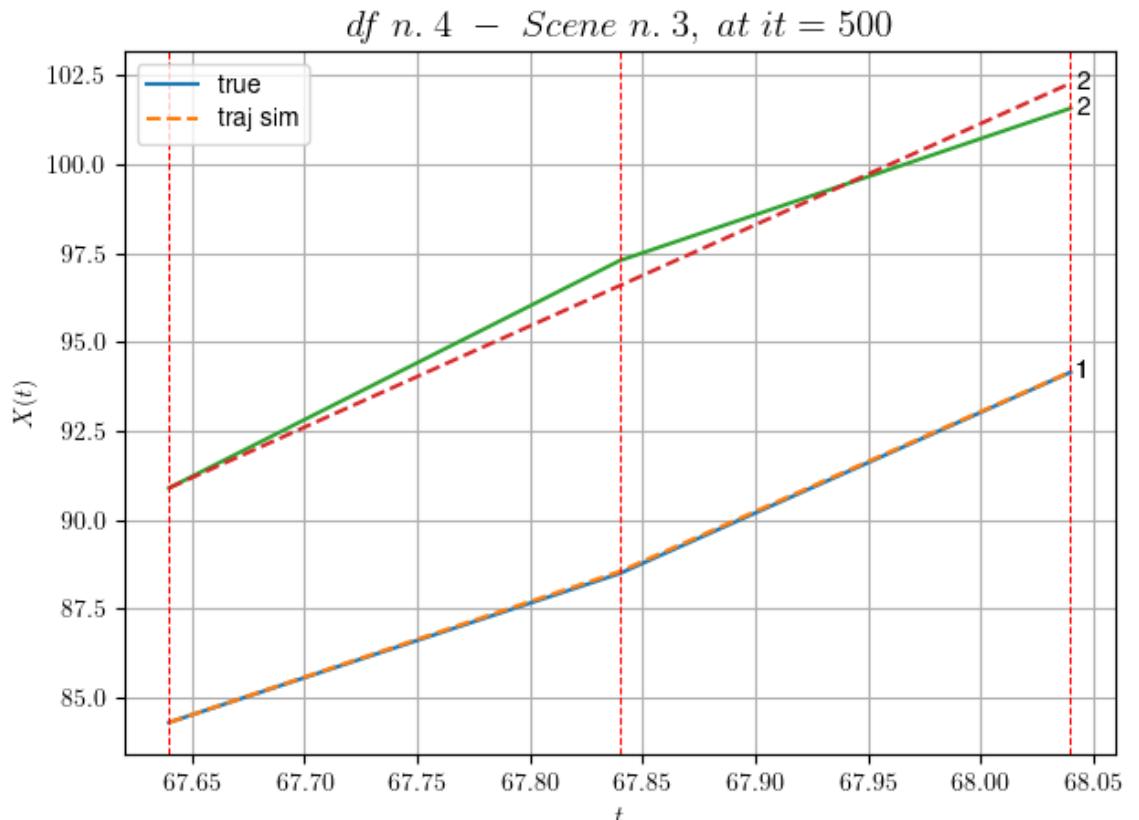
df n.4, scene n.3/69

We have 2 time intervals inside [67.64, 68.04]

- Time interval n.0: [67.64, 67.84]
 - * y_true: [20.95295595]
 - * v_ann: [21.229459762573242, 28.46498000771247]

- Time interval n.1: [67.84, 68.04]
 - * y_true: [28.30446421]
 - * v_ann: [28.095504760742188, 28.46498000771247]

- * err= 0.16579168061918023
- * Learning rate NN = 0.00036449998151510954
- * diff = 8.504418142263326e-06



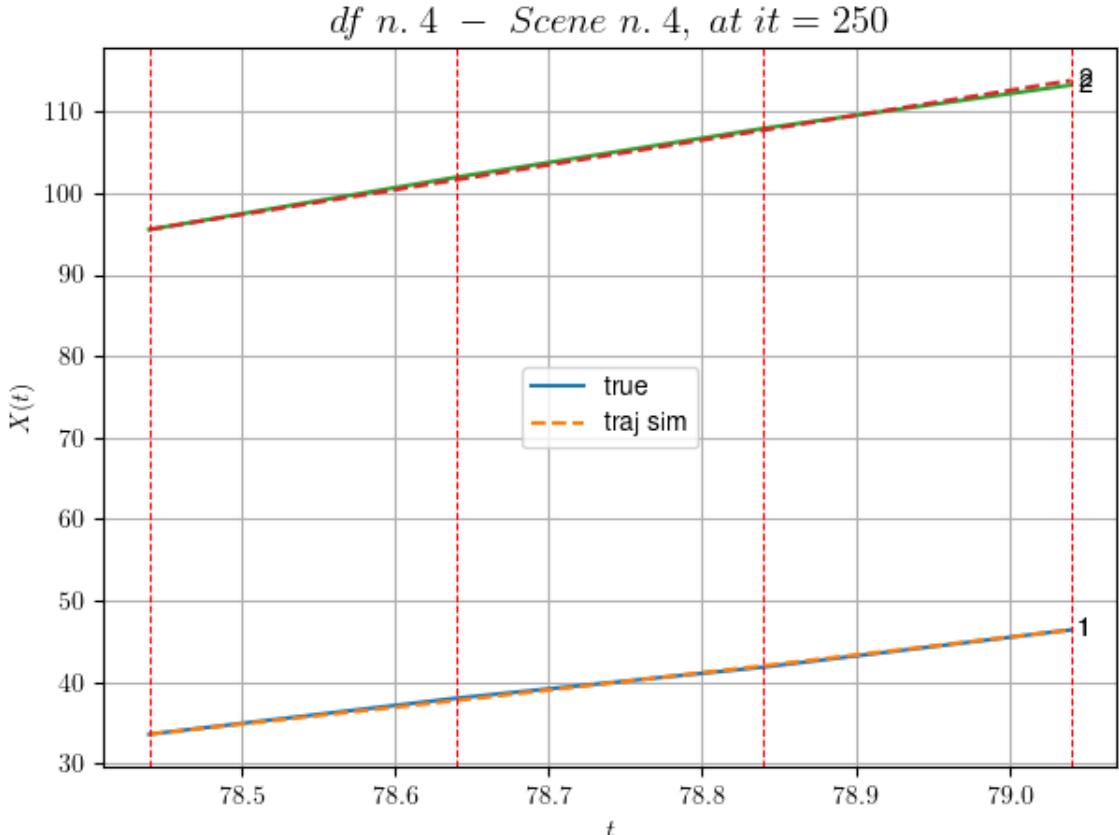
For scene 3/69

* use LR_NN=0.0005 with err=0.31644789971271053 at it=24
* v0_scn_mean = 28.526380807392247
* MAE = 0.16579168061918023

df n.4, scene n.4/69

We have 3 time intervals inside [78.44, 79.04]

* err= 0.0735642493452486
* Learning rate NN = 8.099998922261875e-06
* diff = 6.215536464265758e-07



For scene 4/69

* use LR_NN=1e-05 with err=0.06907857140165298 at it=24
 * v0_scn_mean = 30.448769923223654
 * MAE = 0.07050344766938095

df n.4, scene n.5/69

We have 13 time intervals inside [110.64, 113.24]

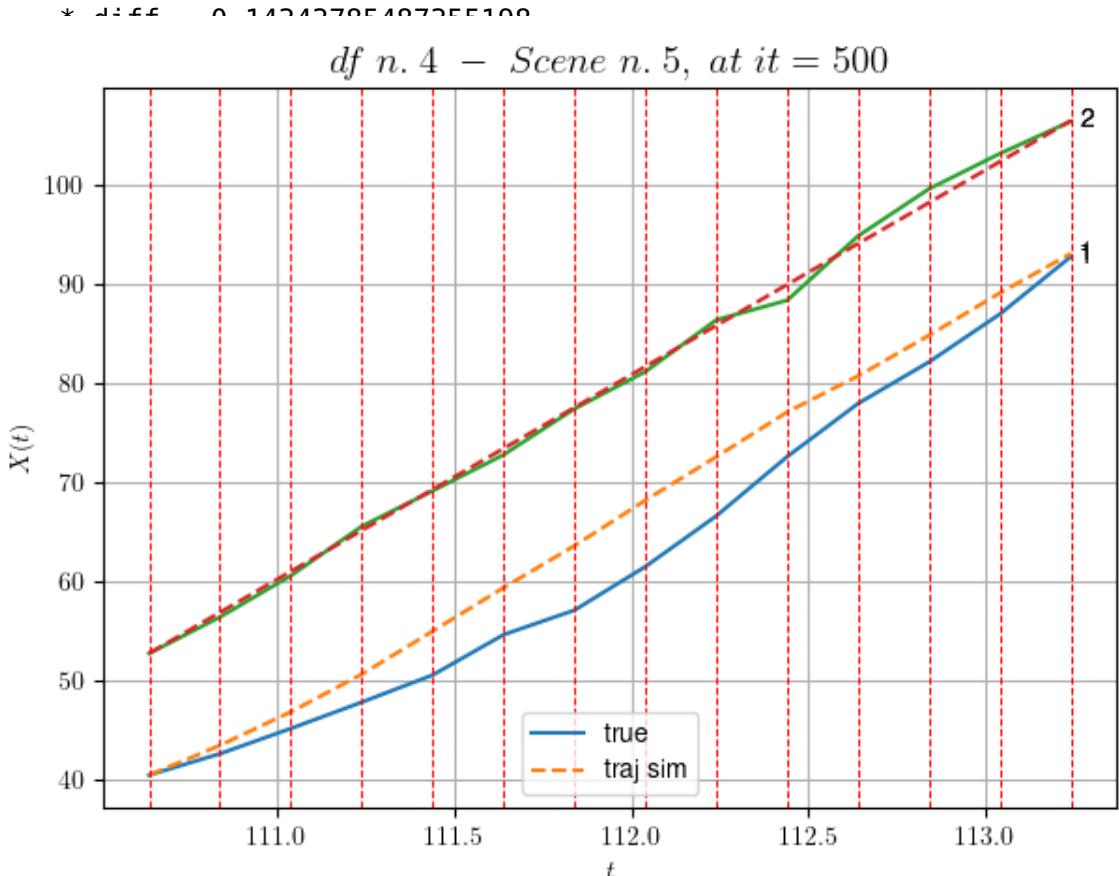
- Time interval n.0: [110.64, 110.84]
 - * y_true: [10.80033908]
 - * v_ann: [14.998976707458496, 20.715943924123952]

- Time interval n.1: [110.84, 111.04]
 - * y_true: [12.76045781]
 - * v_ann: [16.975330352783203, 20.715943924123952]

- Time interval n.2: [111.04, 111.24]
 - * y_true: [13.29051772]
 - * v_ann: [19.007061004638672, 20.715943924123952]

- Time interval n.3: [111.24, 111.44]
 - * y_true: [13.73063254]

```
* v_ann: [21.77834129333496, 20.715943924123952]
-----
-----  
- Time interval n.4: [111.44, 111.64]  
* y_true: [20.39103039]  
* v_ann: [21.98090362548828, 20.715943924123952]
-----  
- Time interval n.5: [111.64, 111.84]  
* y_true: [12.40070342]  
* v_ann: [21.206626892089844, 20.715943924123952]
-----  
- Time interval n.6: [111.84, 112.04]  
* y_true: [22.01468599]  
* v_ann: [22.962251663208008, 20.715943924123952]
-----  
- Time interval n.7: [112.04, 112.24]  
* y_true: [25.63201558]  
* v_ann: [22.00376319885254, 20.715943924123952]
-----  
- Time interval n.8: [112.24, 112.44]  
* y_true: [29.96281161]  
* v_ann: [22.61838722229004, 20.715943924123952]
-----  
- Time interval n.9: [112.44, 112.64]  
* y_true: [26.87288138]  
* v_ann: [18.213970184326172, 20.715943924123952]
-----  
- Time interval n.10: [112.64, 112.84]  
* y_true: [20.9625639]  
* v_ann: [20.56761932373047, 20.715943924123952]
-----  
- Time interval n.11: [112.84, 113.04]  
* y_true: [24.26335312]  
* v_ann: [21.402225494384766, 20.715943924123952]
-----  
- Time interval n.12: [113.04, 113.24]  
* y_true: [28.98450298]  
* v_ann: [19.902570724487305, 20.715943924123952]
-----  
* err= 8.008097282477694  
* Learning rate NN = 7.178974919952452e-05
```



For scene 5/69

```
* use LR_NN=0.001 with err=101.23703183823007 at it=24
* v0_scn_mean = 21.08730616708806
* MAE = 3.2103330903668623
```

df n. 4, scene n. 6/69

We have 5 time intervals inside [122.84, 123.84]

- Time interval n.0: [122.84, 123.04]
 - * y_true: [15.65157815]
 - * v_ann: [10.057430267333984, 25.259320008419376]

- Time interval n.1: [123.04, 123.24]
 - * y_true: [3.90041857]
 - * v_ann: [14.162281036376953, 25.259320008419376]

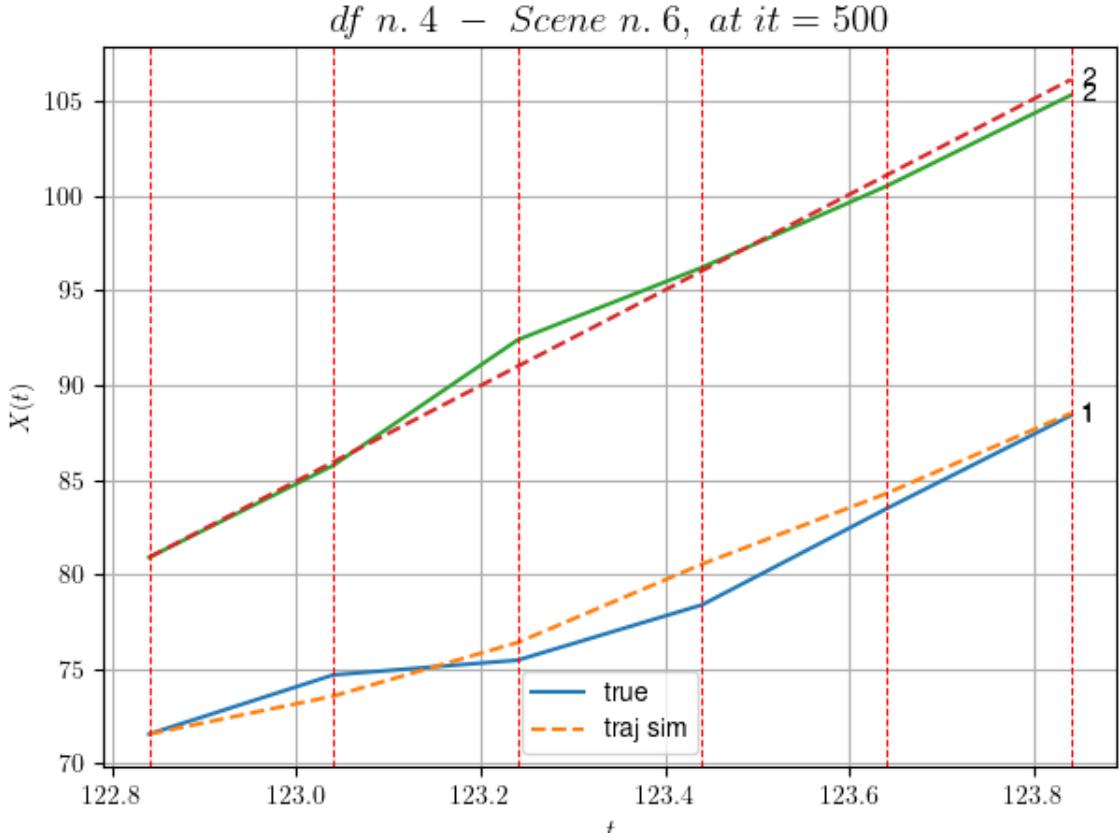
- Time interval n.2: [123.24, 123.44]
 - * y_true: [14.6217105]
 - * v_ann: [20.72629737854004, 25.259320008419376]

- Time interval n.3: [123.44, 123.64]
 - * y_true: [25.423221]

```
* v_ann: [18.669694900512695, 25.259320008419376]
```

- Time interval n.4: [123.64, 123.84]
 - * y_true: [24.62349506]
 - * v_ann: [21.186552047729492, 25.259320008419376]

- * err= 0.8709655887399748
- * Learning rate NN = 0.0003874204121530056
- * diff = 0.03265259383931651



For scene 6/69

- * use LR_NN=0.001 with err=5.464713340745279 at it=24
- * v0_scn_mean = 25.448947208046338
- * MAE = 0.7806937793550458

df n.4, scene n.7/69

We have 5 time intervals inside [128.24,129.24]

- Time interval n.0: [128.24, 128.44]
 - * y_true: [14.81009626]
 - * v_ann: [15.835845947265625, 23.00518102872547]

- Time interval n.1: [128.44, 128.64]

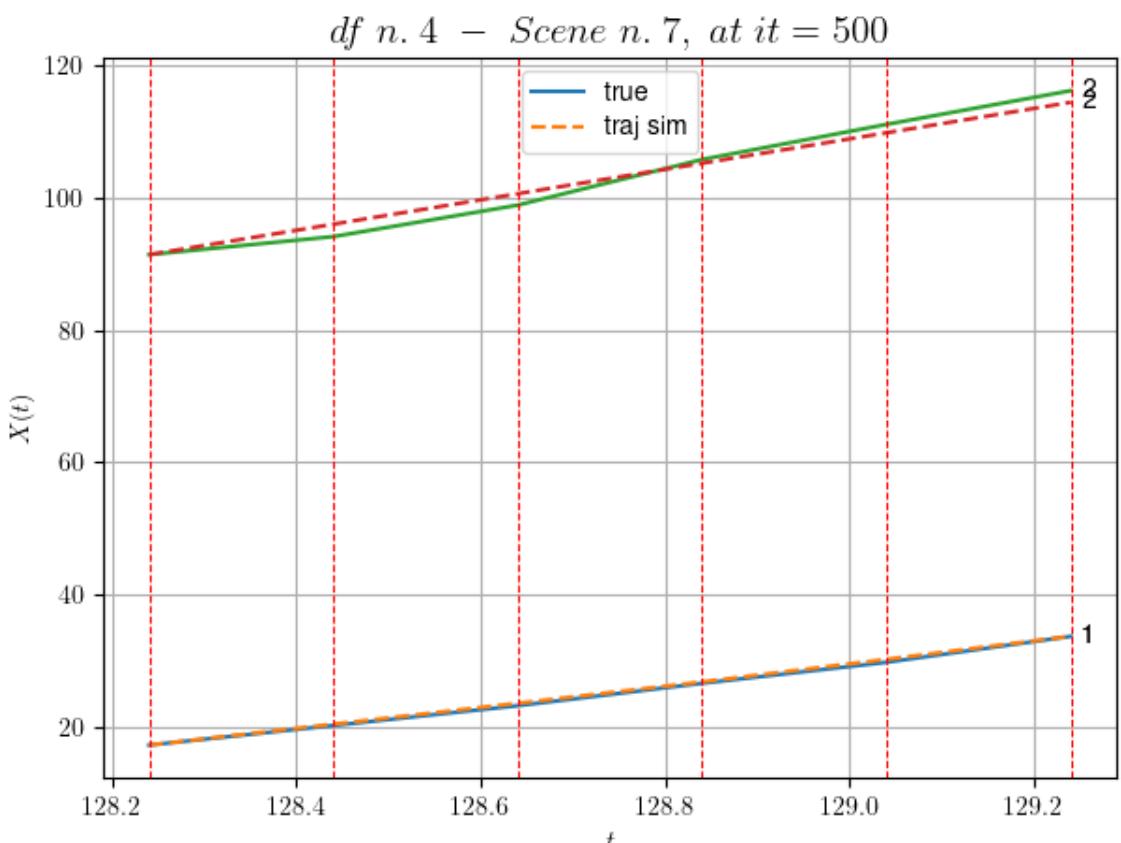
```
* y_true: [14.95013258]
* v_ann: [15.760388374328613, 23.00518102872547]
```

```
- Time interval n.2: [128.64, 128.84]
* y_true: [16.91019825]
* v_ann: [16.164419174194336, 23.00518102872547]
```

```
- Time interval n.3: [128.84, 129.04]
* y_true: [15.87023632]
* v_ann: [17.01434326171875, 23.00518102872547]
```

```
- Time interval n.4: [129.04, 129.24]
* y_true: [19.58037532]
* v_ann: [17.49476432800293, 23.00518102872547]
```

```
* err= 0.9970607788172301
* Learning rate NN = 3.874203684972599e-06
* diff = 0.00010810048358711466
```



For scene 7/69

```
* use LR_NN=1e-05 with err=7.581258557730995 at it=24
* v0_scn_mean = 23.28497378752331
* MAE = 0.8387523692666023
```

```
df n.4, scene n.8/69
```

```
=====
=====
```

We have 15 time intervals inside [129.84,132.84]
- Time interval n.0: [129.84, 130.04]
 * y_true: [24.3308993]
 * v_ann: [18.279918670654297, 21.068534244852454]

```
-----
-----
```

- Time interval n.1: [130.04, 130.24]
 * y_true: [25.1311264]
 * v_ann: [20.740407943725586, 21.068534244852454]

```
-----
-----
```

- Time interval n.2: [130.24, 130.44]
 * y_true: [18.02095029]
 * v_ann: [21.469846725463867, 21.068534244852454]

```
-----
-----
```

- Time interval n.3: [130.44, 130.64]
 * y_true: [24.90548921]
 * v_ann: [20.92499351501465, 21.068534244852454]

```
-----
-----
```

- Time interval n.4: [130.64, 130.84]
 * y_true: [11.38077328]
 * v_ann: [20.5762939453125, 21.068534244852454]

```
-----
-----
```

- Time interval n.5: [130.84, 131.04]
 * y_true: [21.95170349]
 * v_ann: [18.620718002319336, 21.068534244852454]

```
-----
-----
```

- Time interval n.6: [131.04, 131.24]
 * y_true: [17.45149397]
 * v_ann: [18.20346450805664, 21.068534244852454]

```
-----
-----
```

- Time interval n.7: [131.24, 131.44]
 * y_true: [16.55158146]
 * v_ann: [17.871925354003906, 21.068534244852454]

```
-----
-----
```

- Time interval n.8: [131.44, 131.64]
 * y_true: [21.5222925]
 * v_ann: [17.1044864654541, 21.068534244852454]

```
- Time interval n.9: [131.64, 131.84]
  * y_true: [15.78182924]
  * v_ann: [17.34520149230957, 21.068534244852454]

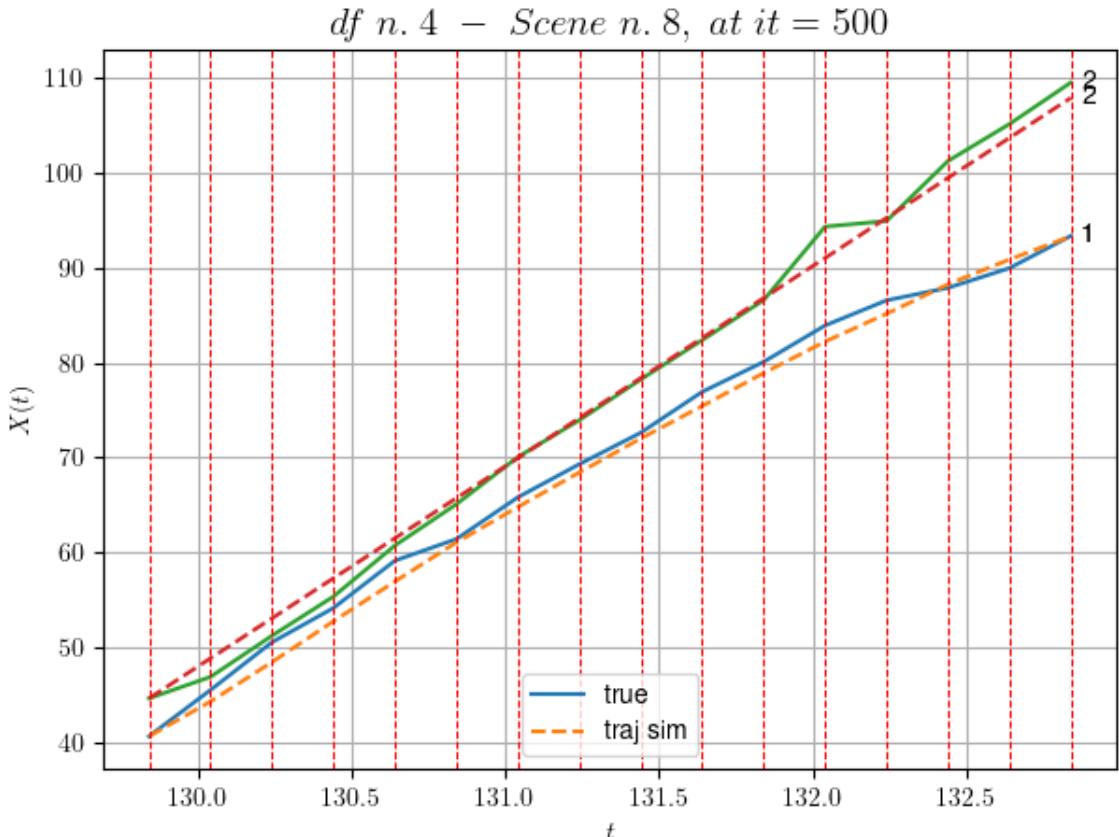
-----
- Time interval n.10: [131.84, 132.04]
  * y_true: [19.13245068]
  * v_ann: [16.575592041015625, 21.068534244852454]

-----
- Time interval n.11: [132.04, 132.24]
  * y_true: [13.24181102]
  * v_ann: [14.634377479553223, 21.068534244852454]

-----
- Time interval n.12: [132.24, 132.44]
  * y_true: [6.57094265]
  * v_ann: [15.502208709716797, 21.068534244852454]

-----
- Time interval n.13: [132.44, 132.64]
  * y_true: [10.39156435]
  * v_ann: [13.048600196838379, 21.068534244852454]

-----
- Time interval n.14: [132.64, 132.84]
  * y_true: [16.97271695]
  * v_ann: [12.288179397583008, 21.068534244852454]
```



For scene 8/69

```
* use LR_NN=0.001 with err=120.22168013061474 at it=24
* v0_scn_mean = 21.425792874990297
* MAE = 1.7293079102800406
```

df n.4, scene n.9/69

We have 4 time intervals inside [136.64,137.44]

- Time interval n.0: [136.64, 136.84]
 - * y_true: [17.67050411]
 - * v_ann: [17.95339584350586, 25.5404610451192]

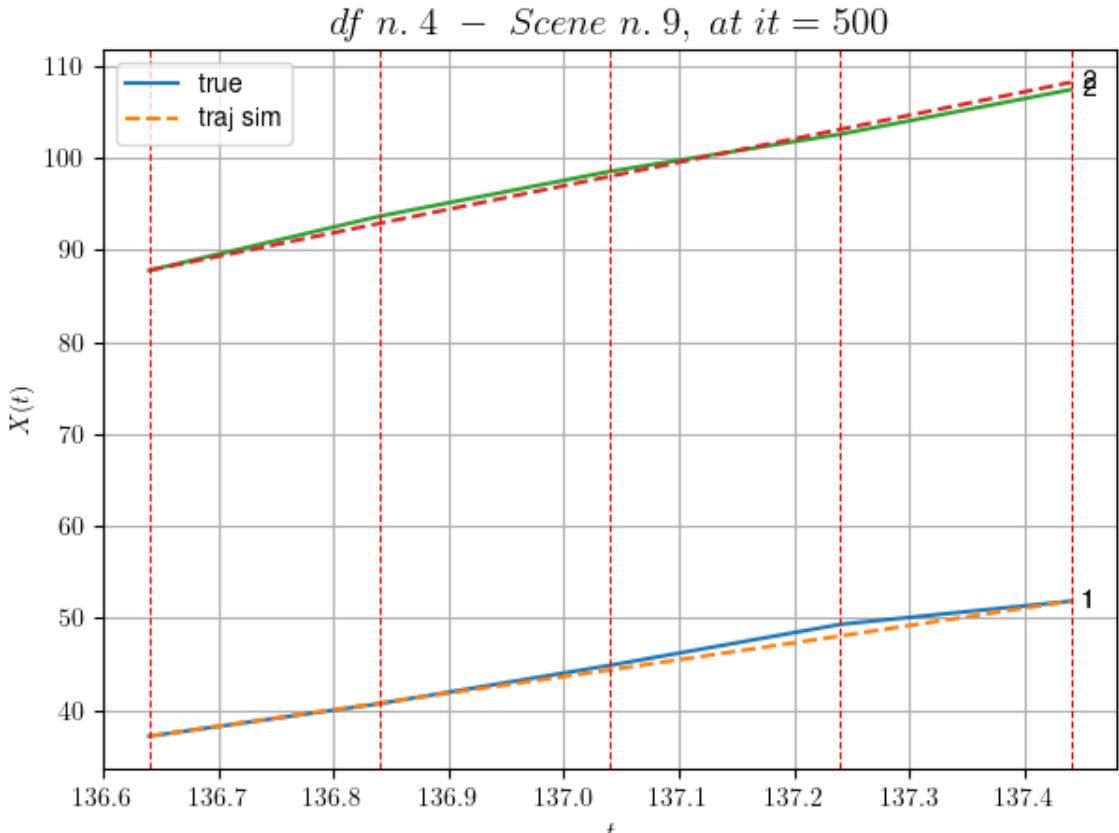
- Time interval n.1: [136.84, 137.04]
 - * y_true: [20.80072476]
 - * v_ann: [18.04477310180664, 25.5404610451192]

- Time interval n.2: [137.04, 137.24]
 - * y_true: [22.26092051]
 - * v_ann: [18.441741943359375, 25.5404610451192]

- Time interval n.3: [137.24, 137.44]
 - * y_true: [12.60058887]

```
* v_ann: [18.918033599853516, 25.5404610451192]
```

```
* err= 0.3633204138174009
* Learning rate NN = 4.782968062500004e-06
* diff = 4.4202849083130324e-05
```



For scene 9/69

```
* use LR_NN=1e-05 with err=3.28267711605555 at it=24
* v0_scn_mean = 25.71884260327991
* MAE = 0.3629389069688783
```

df n.4, scene n.10/69

```
We have 4 time intervals inside [151.04,151.84]
- Time interval n.0: [151.04, 151.24]
  * y_true: [16.79116951]
  * v_ann: [21.13999366760254, 20.096014544894906]
```

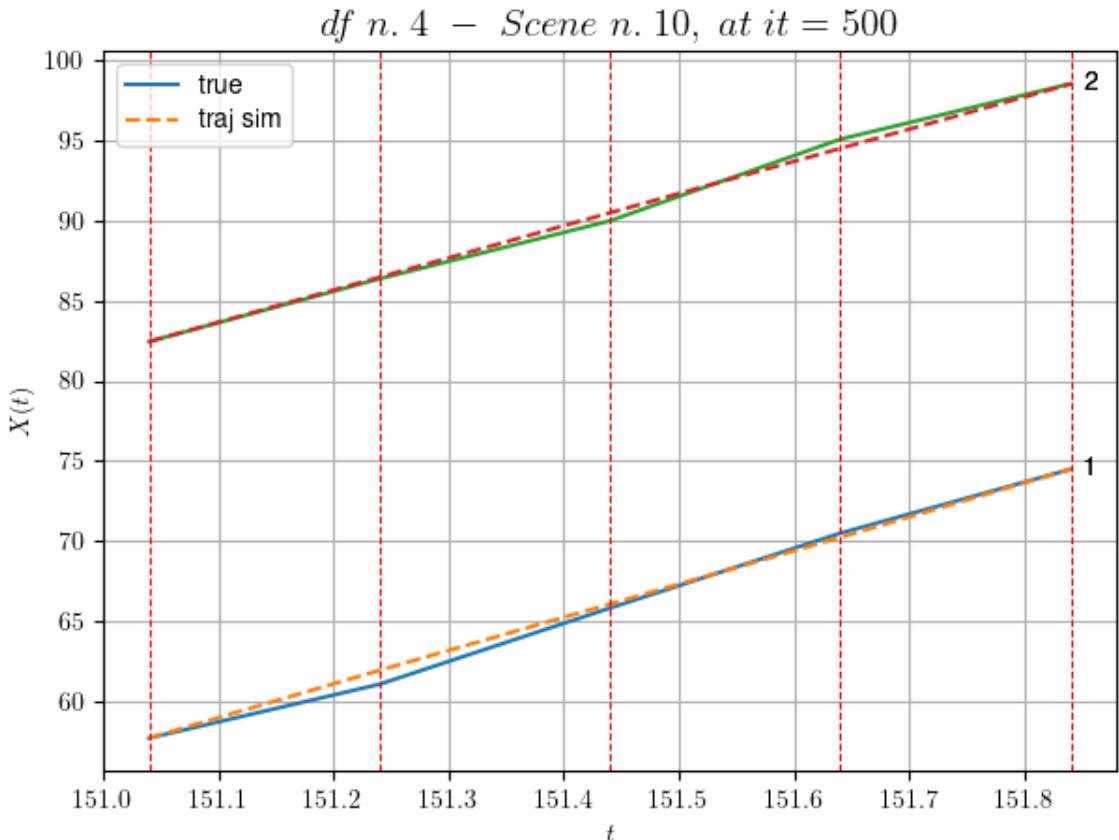
```
- Time interval n.1: [151.24, 151.44]
  * y_true: [23.78181081]
  * v_ann: [20.67402458190918, 20.096014544894906]
```

```
- Time interval n.2: [151.44, 151.64]
```

```
* y_true: [23.372117]
* v_ann: [20.836545944213867, 20.096014544894906]
```

```
- Time interval n.3: [151.64, 151.84]
* y_true: [19.97194937]
* v_ann: [21.27757453918457, 20.096014544894906]
```

```
* err= 0.14788821460428098
* Learning rate NN = 2.3914839403005317e-05
* diff = 1 0142637716629274e-06
```



For scene 10/69

```
* use LR_NN=5e-05 with err=11.637103319484854 at it=24
* v0_scn_mean = 20.492173963023504
* MAE = 0.14706045735778647
```

df n. 4, scene n. 11/69

```
We have 2 time intervals inside [153.04, 153.44]
```

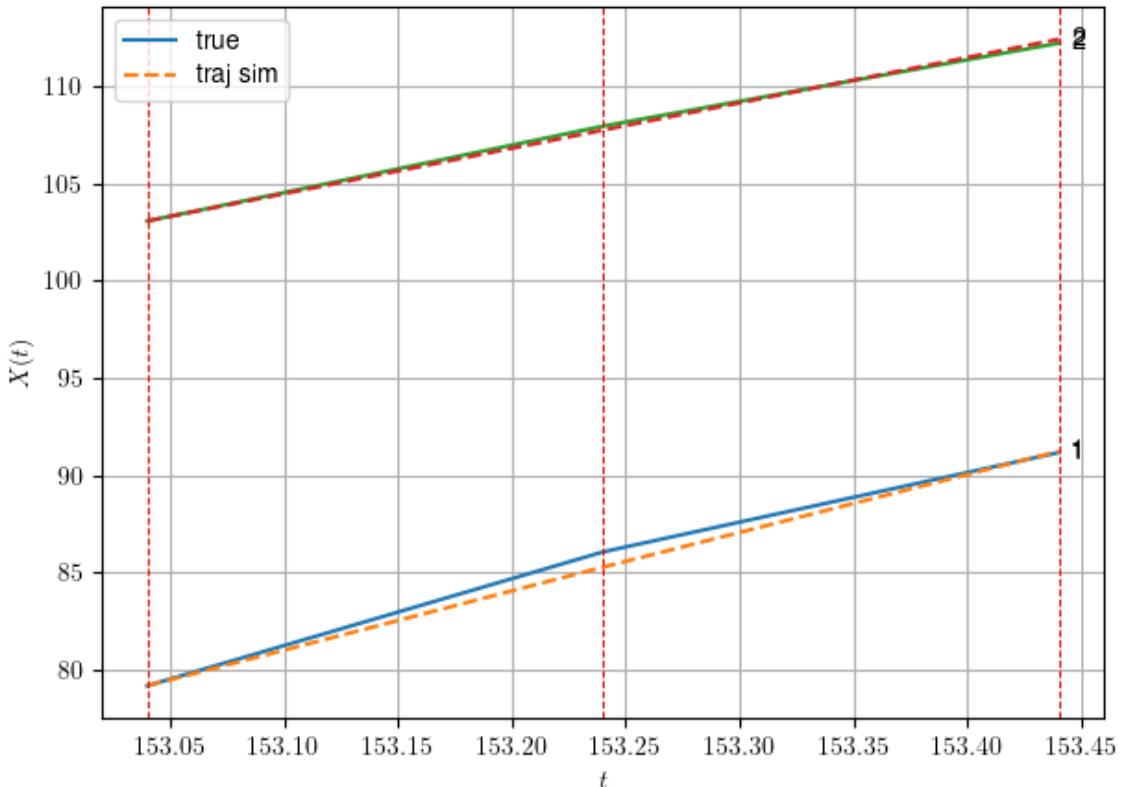
```
- Time interval n.0: [153.04, 153.24]
* y_true: [34.43447026]
* v_ann: [30.517471313476562, 23.38510904852381]
```

```
- Time interval n.1: [153.24, 153.44]
```

```
* y_true: [25.55379665]
* v_ann: [29.794981002807617, 23.38510904852381]
```

```
* err= 0.1168609955911838
* Learning rate NN = 3.6449993785936385e-05
* diff = 0.0003878031919719027
```

df n. 4 – Scene n. 11, at it = 500



For scene 11/69

```
* use LR_NN=5e-05 with err=1.6359559368035375 at it=24
* v0_scn_mean = 23.64970468653222
* MAE = 0.11607659573441793
```

df n.4, scene n.12/69

We have 6 time intervals inside [173.24, 174.44]

- Time interval n.0: [173.24, 173.44]
 - * y_true: [11.93089915]
 - * v_ann: [21.693689346313477, 26.312487041784248]

- Time interval n.1: [173.44, 173.64]
 - * y_true: [18.52159277]
 - * v_ann: [22.634389877319336, 26.312487041784248]

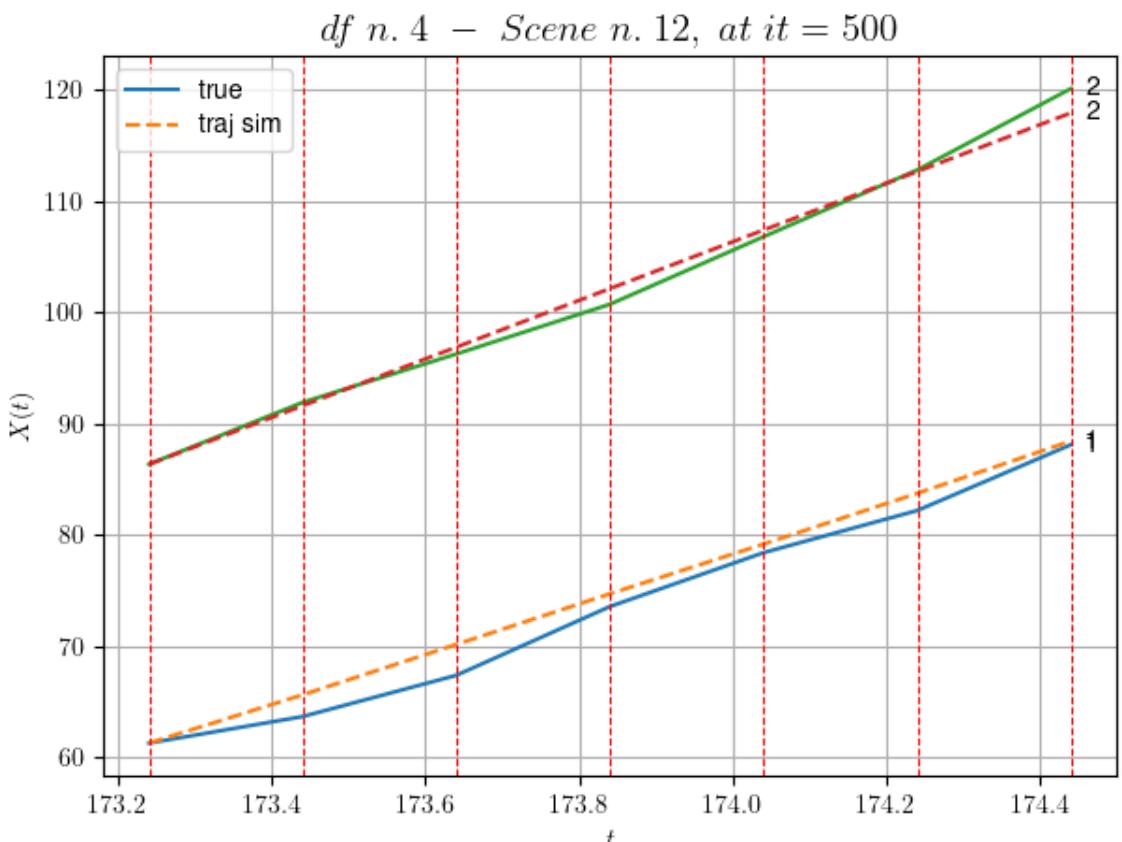
- Time interval n.2: [173.64, 173.84]
 * y_true: [30.92298077]
 * v_ann: [22.77696418762207, 26.312487041784248]

- Time interval n.3: [173.84, 174.04]
 * y_true: [24.21265011]
 * v_ann: [22.343955993652344, 26.312487041784248]

- Time interval n.4: [174.04, 174.24]
 * y_true: [18.93240035]
 * v_ann: [22.800716400146484, 26.312487041784248]

- Time interval n.5: [174.24, 174.44]
 * y_true: [29.57417985]
 * v_ann: [23.48740005493164, 26.312487041784248]

* err= 1.6802481967770144
 * Learning rate NN = 3.138104830213706e-06
 * diff = 0.001379480049678028



For scene 12/69

* use LR_NN=1e-05 with err=4.068243299584427 at it=24
 * v0 scn mean = 26.45998756008462
 * MAE = 1.6733230598832016

```
=====
```

df n.4, scene n.13/69

```
=====
```

We have 5 time intervals inside [176.24, 177.24]

- Time interval n.0: [176.24, 176.44]
 - * y_true: [19.93138519]
 - * v_ann: [15.777661323547363, 27.94819777081733]

- Time interval n.1: [176.44, 176.64]
 - * y_true: [13.15101712]
 - * v_ann: [16.181320190429688, 27.94819777081733]

- Time interval n.2: [176.64, 176.84]
 - * y_true: [20.45180955]
 - * v_ann: [16.660127639770508, 27.94819777081733]

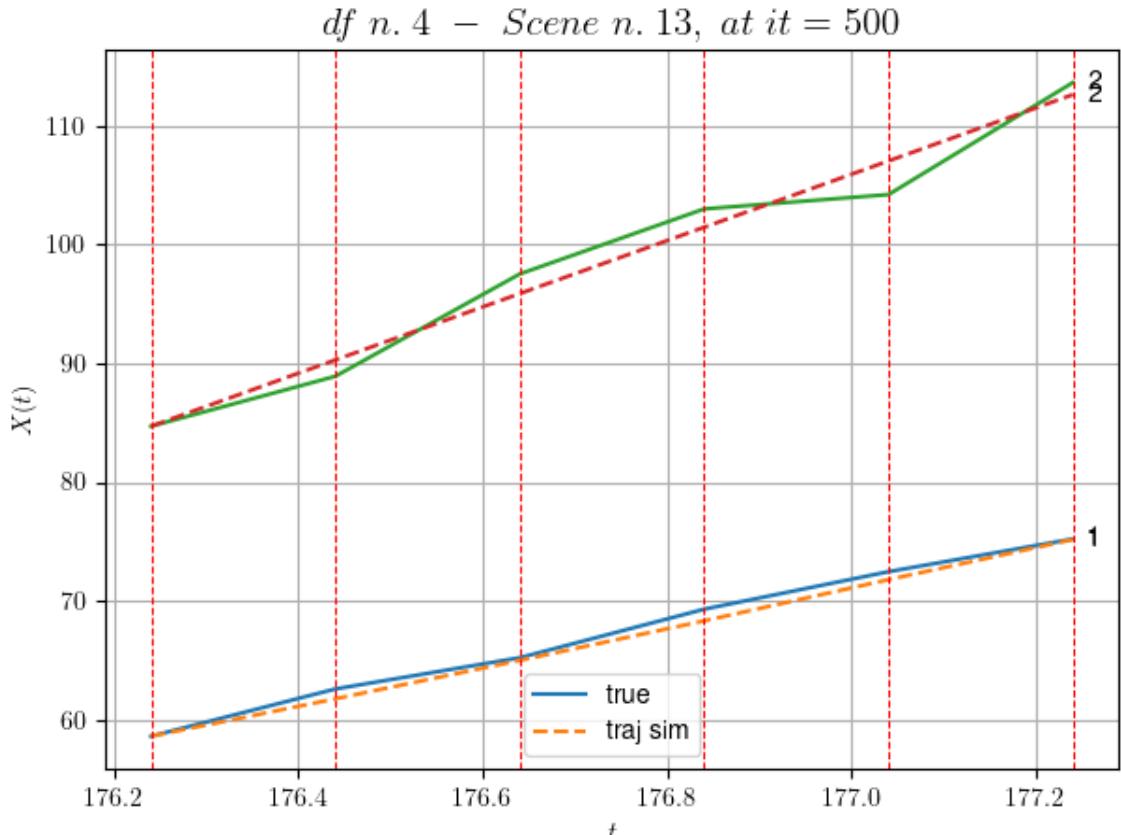
- Time interval n.3: [176.84, 177.04]
 - * y_true: [15.80147689]
 - * v_ann: [17.375164031982422, 27.94819777081733]

- Time interval n.4: [177.04, 177.24]
 - * y_true: [13.79145469]
 - * v_ann: [16.877580642700195, 27.94819777081733]

* err= 1.5206104466201484

* Learning rate NN = 1.9371018424862996e-05

* diff = 0 0030554900268360274



For scene 13/69

- * use LR_NN=5e-05 with err=2.5450649932854224 at it=24
- * v0_scn_mean = 28.030269859968765
- * MAE = 1.5183980556453607

df n.4, scene n.14/69

We have 8 time intervals inside [182.04, 183.64]

- Time interval n.0: [182.04, 182.24]
 - * y_true: [12.8202906]
 - * v_ann: [22.25394630432129, 24.384953428579706]

- Time interval n.1: [182.24, 182.44]
 - * y_true: [13.125309]
 - * v_ann: [22.756528854370117, 24.384953428579706]

- Time interval n.2: [182.44, 182.64]
 - * y_true: [21.64870909]
 - * v_ann: [22.041059494018555, 24.384953428579706]

- Time interval n.3: [182.64, 182.84]
 - * y_true: [24.29091592]

```
* v_ann: [21.953065872192383, 24.384953428579706]
```

```
- Time interval n.4: [182.84, 183.04]
* y_true: [31.71160501]
* v_ann: [21.97161865234375, 24.384953428579706]
```

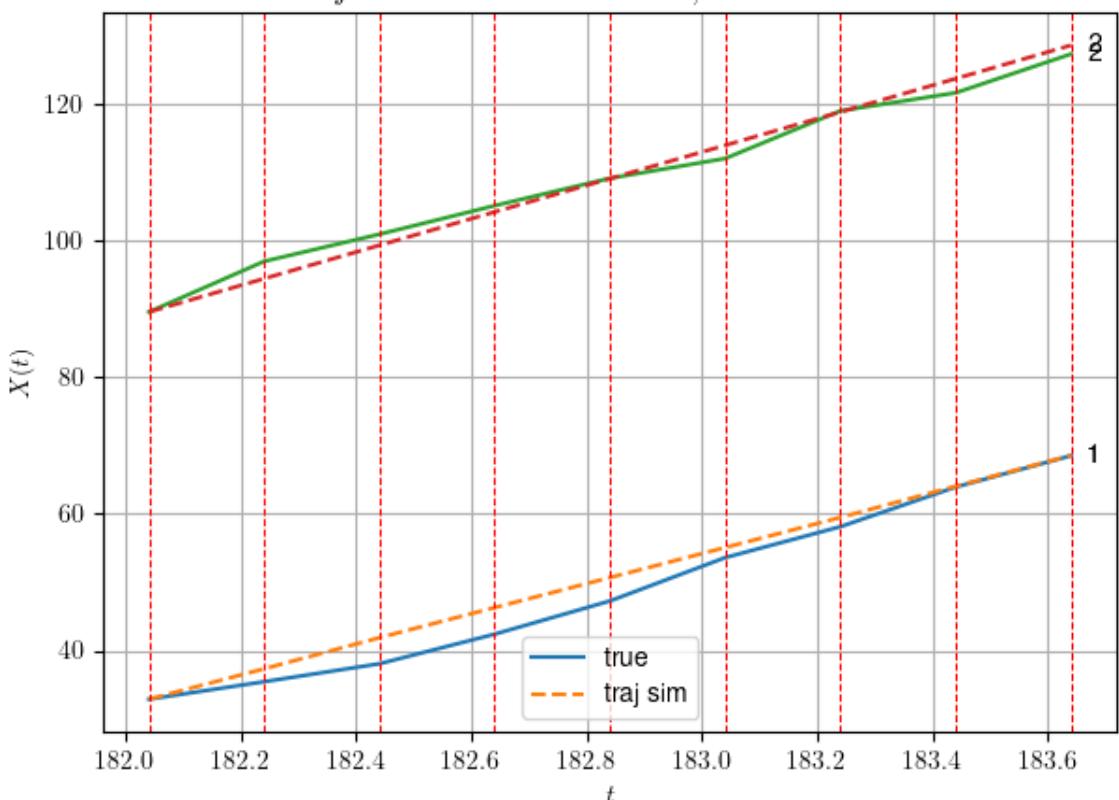
```
- Time interval n.5: [183.04, 183.24]
* y_true: [22.63128316]
* v_ann: [22.018165588378906, 24.384953428579706]
```

```
- Time interval n.6: [183.24, 183.44]
* y_true: [28.99215837]
* v_ann: [22.841556549072266, 24.384953428579706]
```

```
- Time interval n.7: [183.44, 183.64]
* y_true: [22.90183379]
* v_ann: [22.54277992248535, 24.384953428579706]
```

```
* err= 3.8084802288839437
* Learning rate NN = 2.058910467894748e-05
* diff = 0.018233334682096203
```

df n. 4 – Scene n. 14, at it = 500



For scene 14/69

* use LR_NN=0.0001 with err=19.969881305229112 at it=24

```
* v0_scn_mean = 24.60955529139357
* MAE = 2.873067135442785
```

```
=====
```

df n.4, scene n.15/69

```
=====
```

We have 9 time intervals inside [195.44,197.24]

- Time interval n.0: [195.44, 195.64]
 - * y_true: [9.85670669]
 - * v_ann: [10.368206024169922, 16.73844314065949]

- Time interval n.1: [195.64, 195.84]
 - * y_true: [10.16548364]
 - * v_ann: [10.250914573669434, 16.73844314065949]

- Time interval n.2: [195.84, 196.04]
 - * y_true: [10.16548364]
 - * v_ann: [10.098895072937012, 16.73844314065949]

- Time interval n.3: [196.04, 196.24]
 - * y_true: [10.16548364]
 - * v_ann: [10.02016544342041, 16.73844314065949]

- Time interval n.4: [196.24, 196.44]
 - * y_true: [10.16548364]
 - * v_ann: [10.01419734954834, 16.73844314065949]

- Time interval n.5: [196.44, 196.64]
 - * y_true: [10.16548364]
 - * v_ann: [9.977972984313965, 16.73844314065949]

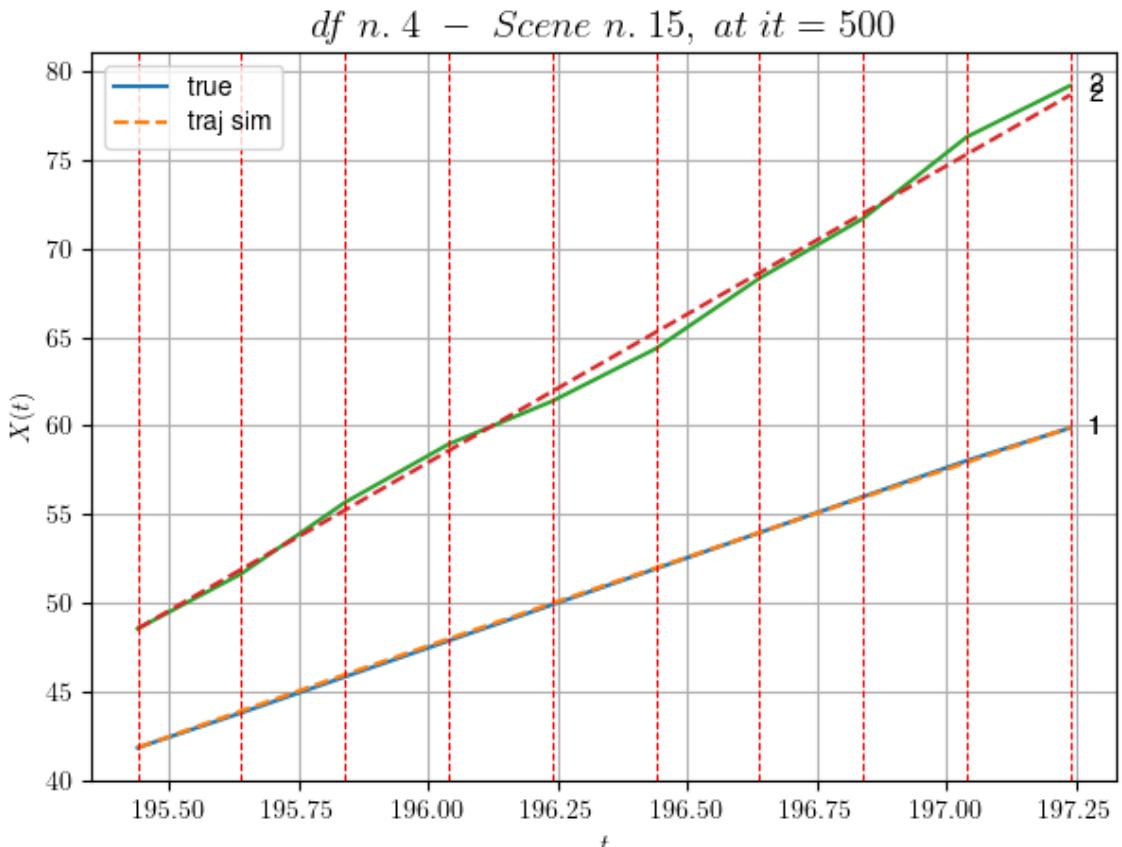
- Time interval n.6: [196.64, 196.84]
 - * y_true: [10.16548364]
 - * v_ann: [9.898880958557129, 16.73844314065949]

- Time interval n.7: [196.84, 197.04]
 - * y_true: [10.16548364]
 - * v_ann: [9.886868476867676, 16.73844314065949]

- Time interval n.8: [197.04, 197.24]

```
* y_true: [9.26246532]
* v_ann: [9.845819473266602, 16.73844314065949]
```

```
* err= 0.1506228042590302
* Learning rate NN = 8.338587213074788e-05
```



For scene 15/69

```
* use LR_NN=0.0005 with err=101.58920490757417 at it=24
* v0_scn_mean = 17.268905414931606
* MAE = 0.15021578703517025
```

df n.4, scene n.16/69

We have 3 time intervals inside [199.64,200.24]

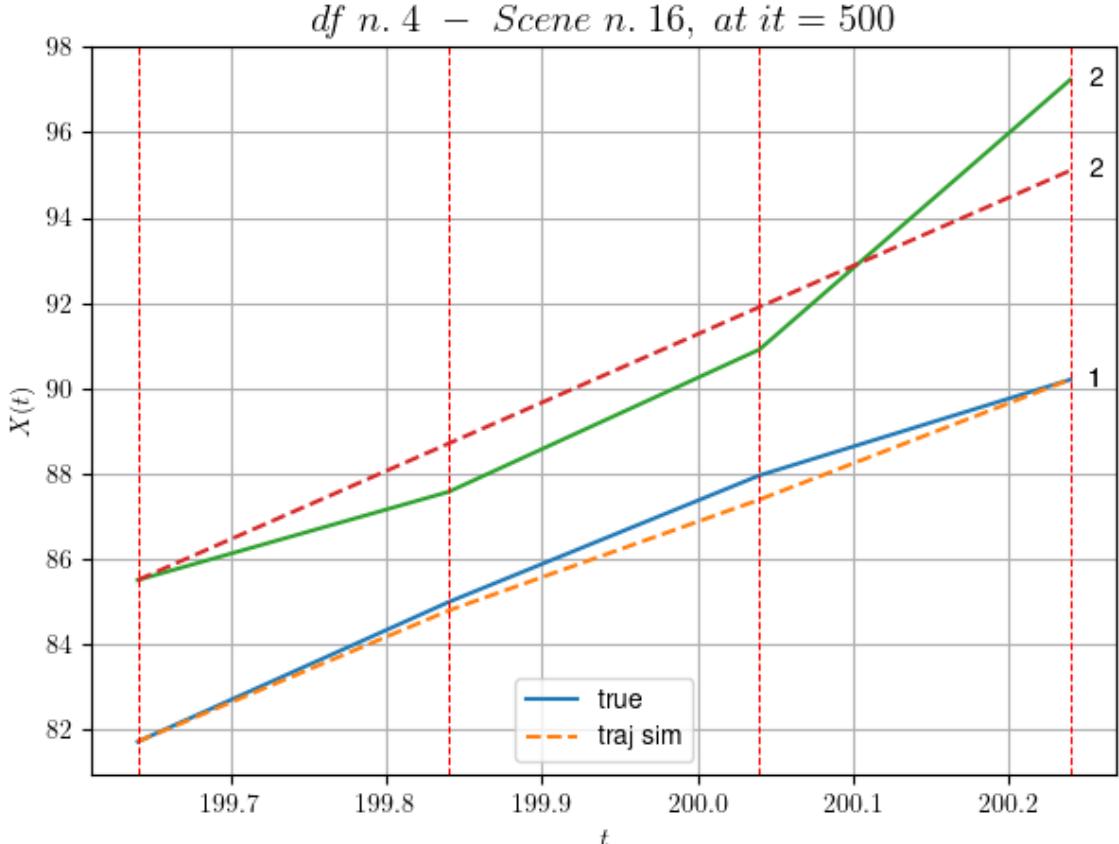
- Time interval n.0: [199.64, 199.84]
 - * y_true: [16.38215778]
 - * v_ann: [15.38361644744873, 16.019151603836857]

- Time interval n.1: [199.84, 200.04]
 - * y_true: [14.86205621]
 - * v_ann: [13.021602630615234, 16.019151603836857]

- Time interval n.2: [200.04, 200.24]

```
* y_true: [11.24167368]
* v_ann: [14.095015525817871, 16.019151603836857]
```

```
* err= 0.8974324750086873
* Learning rate NN = 0.0005904899444431067
* diff = 0.00021884462502019808
```



For scene 16/69

```
* use LR_NN=0.001 with err=12.29809166256158 at it=24
* v0_scn_mean = 16.578385539576225
* MAE = 0.8248866087285422
```

df n.4, scene n.17/69

We have 5 time intervals inside [205.84, 206.84]

- Time interval n.0: [205.84, 206.04]
 - * y_true: [11.12077713]
 - * v_ann: [9.745009422302246, 14.204943221368252]

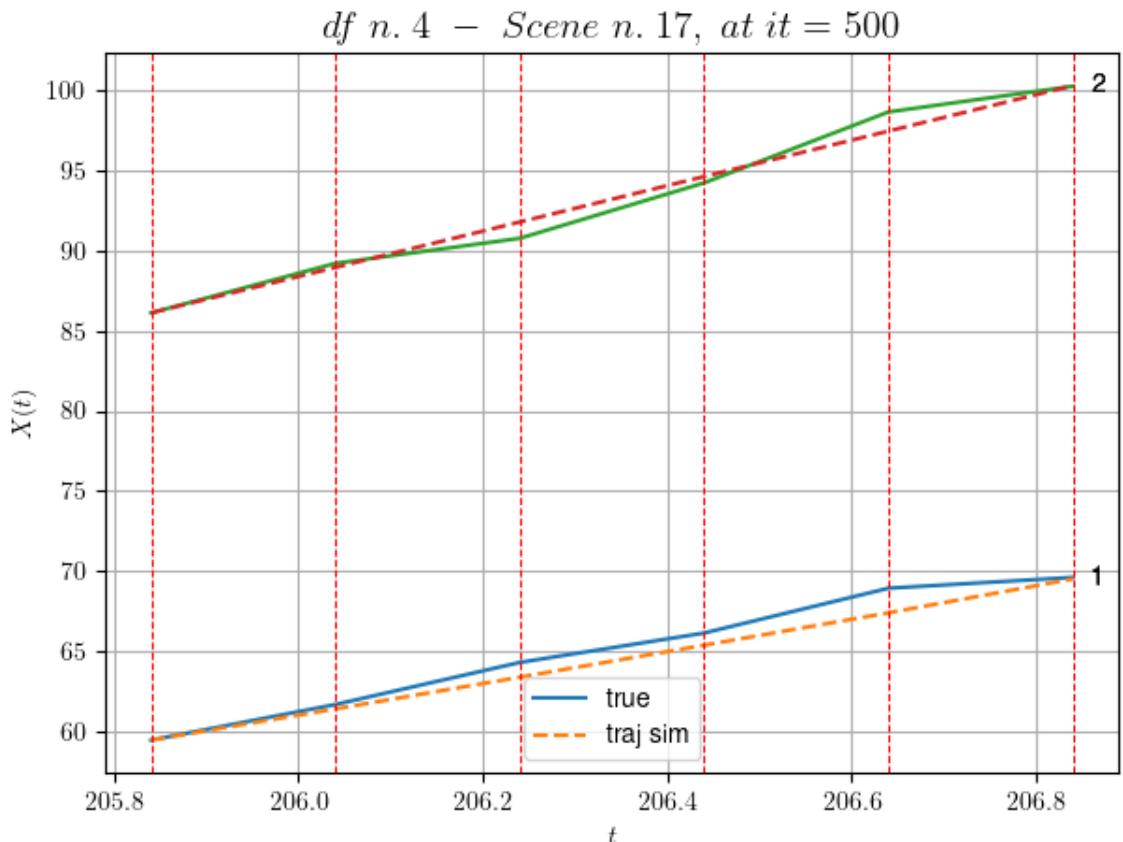
- Time interval n.1: [206.04, 206.24]
 - * y_true: [13.1509984]
 - * v_ann: [9.91818618774414, 14.204943221368252]

```
- Time interval n.2: [206.24, 206.44]
* y_true: [9.19074148]
* v_ann: [10.004986763000488, 14.204943221368252]
```

```
- Time interval n.3: [206.44, 206.64]
* y_true: [14.011227]
* v_ann: [10.12704849243164, 14.204943221368252]
```

```
- Time interval n.4: [206.64, 206.84]
* y_true: [3.38029975]
* v_ann: [10.570284843444824, 14.204943221368252]
```

```
* err= 0.5472471276491573
* Learning rate NN = 3.874203684972599e-05
* diff = 0.004822622542249966
```



For scene 17/69

```
* use LR_NN=0.0001 with err=45.549848795571364 at it=24
* v0_scn_mean = 14.836745492392987
* MAE = 0.5393110655685364
```

df n.4, scene n.18/69

We have 2 time intervals inside [258.04, 258.44]

- Time interval n.0: [258.04, 258.24]
 - * y_true: [8.65094482]
 - * v_ann: [18.26534652709961, 26.487815883435907]
-

- Time interval n.1: [258.24, 258.44]

- * y_true: [29.00349395]

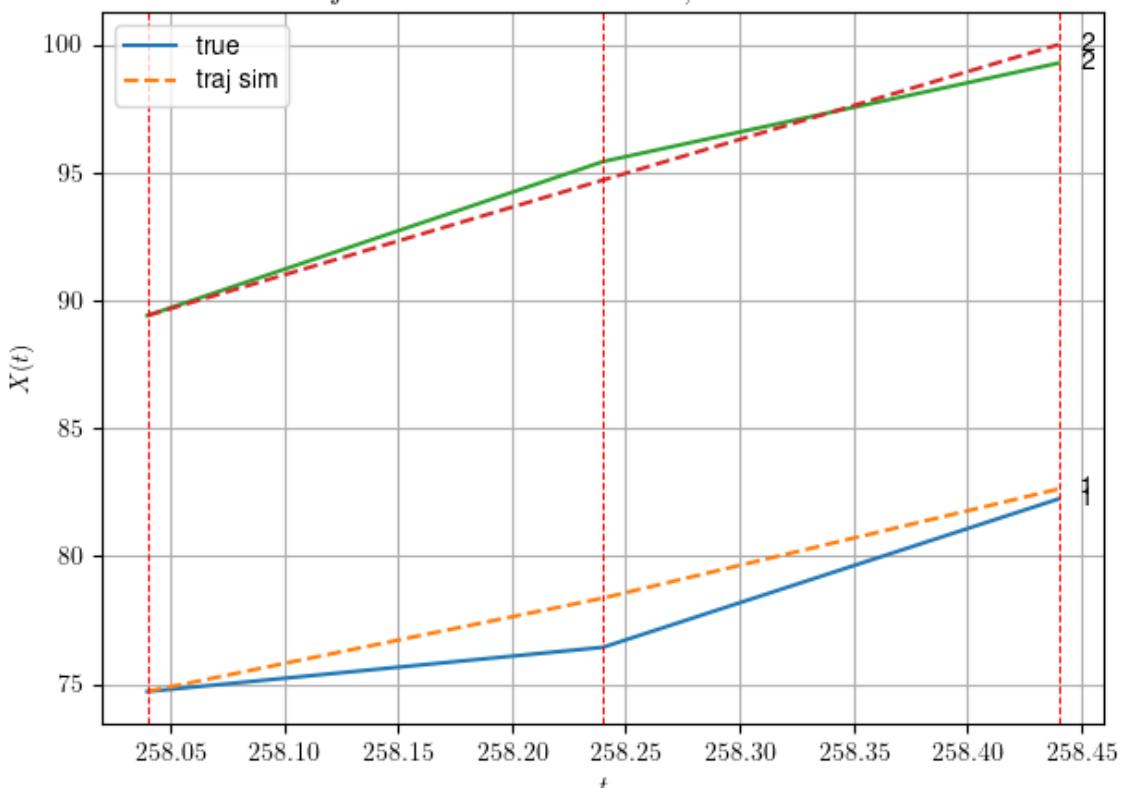
- * v_ann: [21.333757400512695, 26.487815883435907]

- * err= 0.8159064208480085

- * Learning rate NN = 3.6449993785936385e-05

- * diff = 0.007877121337535709

df n. 4 – Scene n. 18, at it = 500



For scene 18/69

- * use LR_NN=5e-05 with err=1.13161763441358 at it=24
 - * v0_scn_mean = 26.628303248070335
 - * MAE = 0.8159064208480085
-
-

df n.4, scene n.19/69

We have 11 time intervals inside [266.84, 269.04]

- Time interval n.0: [266.84, 267.04]

- * y_true: [25.85178656]

- * v_ann: [13.717086791992188, 22.599995584638684]

- ```

- Time interval n.1: [267.04, 267.24]
 * y_true: [0.50003797]
 * v_ann: [13.736364364624023, 22.599995584638684]

- Time interval n.2: [267.24, 267.44]
 * y_true: [18.0014362]
 * v_ann: [15.45930290222168, 22.599995584638684]

- Time interval n.3: [267.44, 267.64]
 * y_true: [16.41218071]
 * v_ann: [16.757606506347656, 22.599995584638684]

- Time interval n.4: [267.64, 267.84]
 * y_true: [22.80209]
 * v_ann: [17.086763381958008, 22.599995584638684]

- Time interval n.5: [267.84, 268.04]
 * y_true: [21.23221002]
 * v_ann: [19.368148803710938, 22.599995584638684]

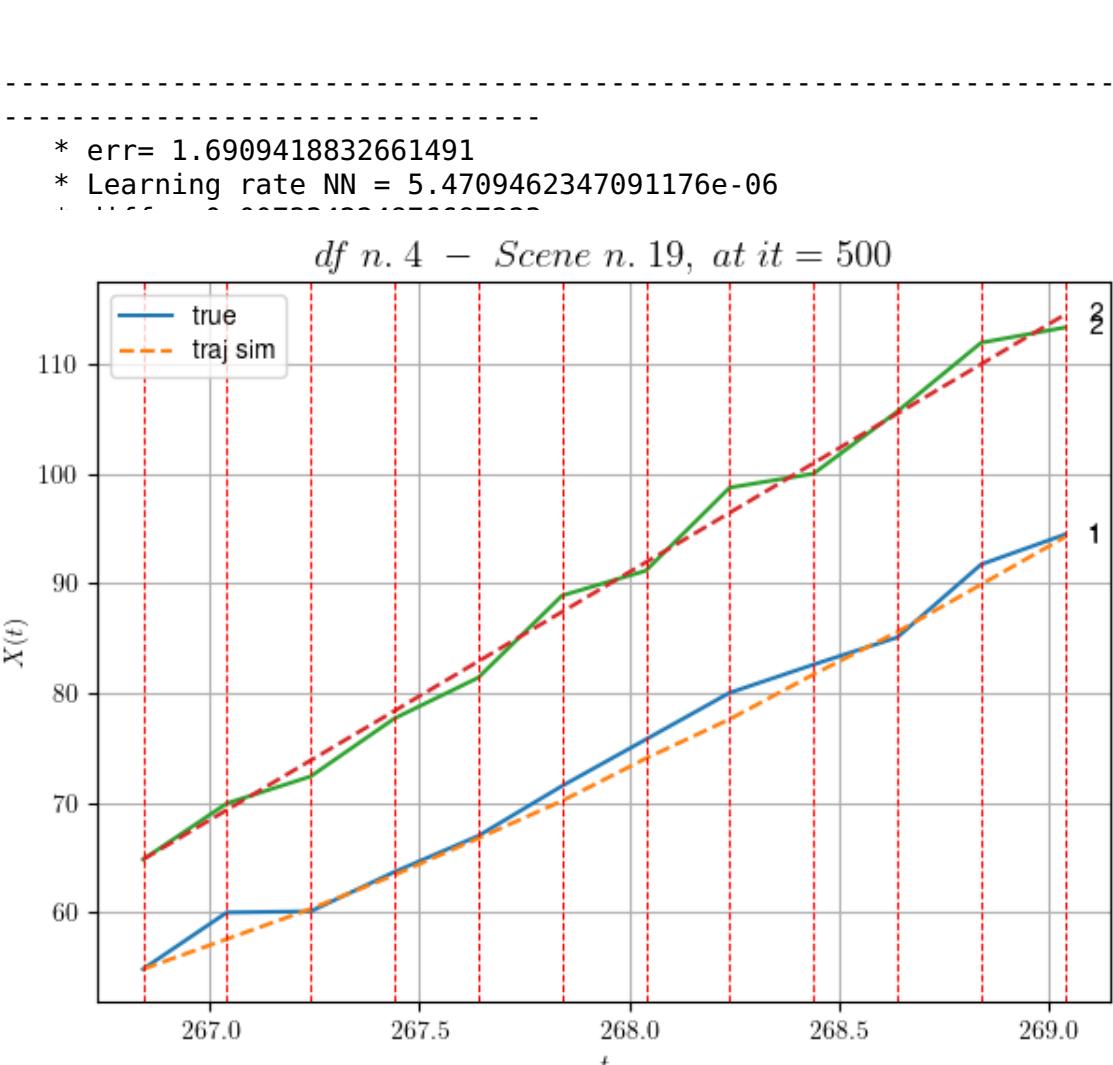
- Time interval n.6: [268.04, 268.24]
 * y_true: [21.28245785]
 * v_ann: [17.884286880493164, 22.599995584638684]

- Time interval n.7: [268.24, 268.44]
 * y_true: [12.86161872]
 * v_ann: [20.459632873535156, 22.599995584638684]

- Time interval n.8: [268.44, 268.64]
 * y_true: [12.42174873]
 * v_ann: [19.36394691467285, 22.599995584638684]

- Time interval n.9: [268.64, 268.84]
 * y_true: [33.2749091]
 * v_ann: [21.683792114257812, 22.599995584638684]

- Time interval n.10: [268.84, 269.04]
 * y_true: [13.66227873]
 * v_ann: [21.593034744262695, 22.599995584638684]
```



For scene 19/69

```
* use LR_NN=5e-05 with err=49.10549918600198 at it=24
* v0_scn_mean = 22.895995761196872
* MAE = 1.6909418832661491
```

---



---

df n.4, scene n.20/69

---



---

We have 8 time intervals inside [285.84, 287.44]

- Time interval n.0: [285.84, 286.04]
  - \* y\_true: [9.53034992]
  - \* v\_ann: [20.1276912689209, 24.201830847422134]

---

- Time interval n.1: [286.04, 286.24]
  - \* y\_true: [14.93061978]
  - \* v\_ann: [19.368114471435547, 24.201830847422134]

---

- Time interval n.2: [286.24, 286.44]
  - \* y\_true: [12.82475396]
  - \* v\_ann: [19.000904083251953, 24.201830847422134]

```


- Time interval n.3: [286.44, 286.64]
* y_true: [25.90137166]
* v_ann: [17.959379196166992, 24.201830847422134]

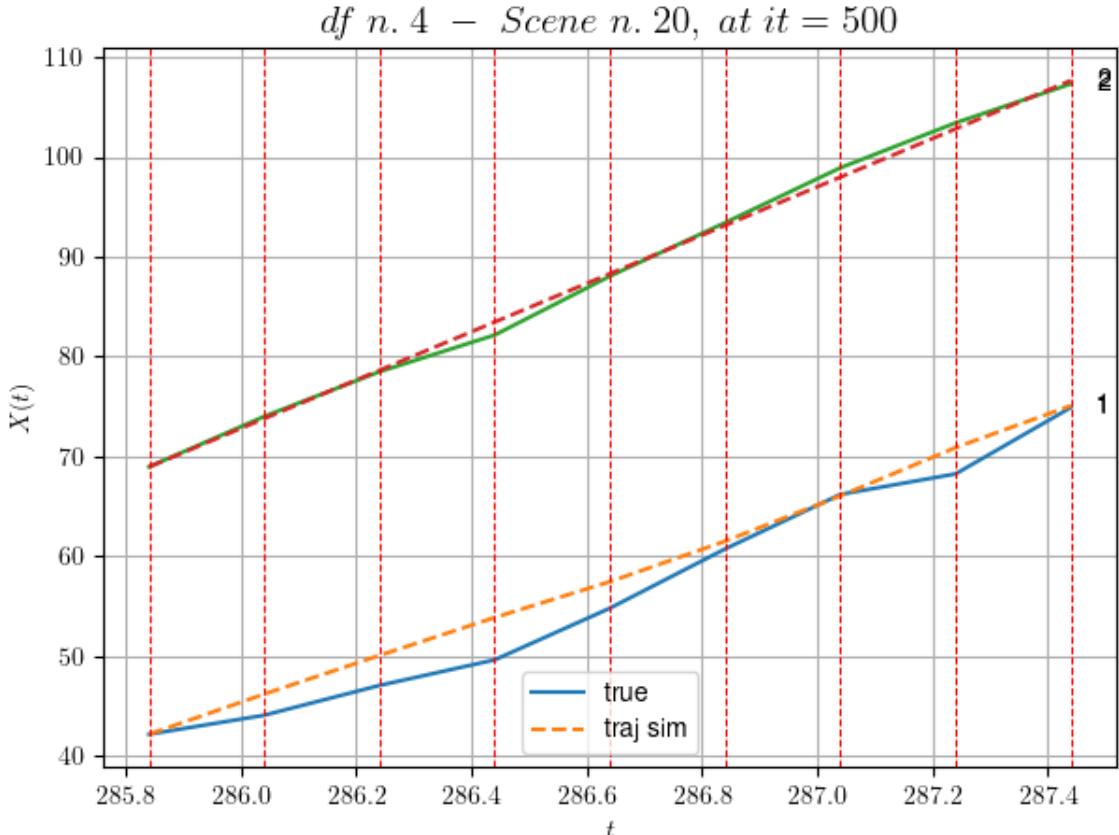
- Time interval n.4: [286.64, 286.84]
* y_true: [29.70192331]
* v_ann: [20.303359985351562, 24.201830847422134]

- Time interval n.5: [286.84, 287.04]
* y_true: [27.3021312]
* v_ann: [22.72039222717285, 24.201830847422134]

- Time interval n.6: [287.04, 287.24]
* y_true: [10.30090033]
* v_ann: [24.18263053894043, 24.201830847422134]

- Time interval n.7: [287.24, 287.44]
* y_true: [33.25329865]
* v_ann: [20.97766876220703, 24.201830847422134]

* err= 2.7457312585073734
* Learning rate NN = 0.00010294552339473739
* diff = 0.05381077571519999
```



For scene 20/69

- \* use LR\_NN=0.0005 with err=16.441604208606762 at it=24
- \* v0\_scn\_mean = 24.4337576134812
- \* MAE = 1.6804434013687495

---



---

df n.4, scene n.21/69

---



---

We have 5 time intervals inside [288.04, 289.04]

- Time interval n.0: [288.04, 288.24]
  - \* y\_true: [15.93157223]
  - \* v\_ann: [10.387102127075195, 22.24789971530882]

---

- Time interval n.1: [288.24, 288.44]
  - \* y\_true: [13.91151456]
  - \* v\_ann: [9.897584915161133, 22.24789971530882]

---

- Time interval n.2: [288.44, 288.64]
  - \* y\_true: [10.99127146]
  - \* v\_ann: [10.985323905944824, 22.24789971530882]

---

- Time interval n.3: [288.64, 288.84]
  - \* y\_true: [14.48179938]

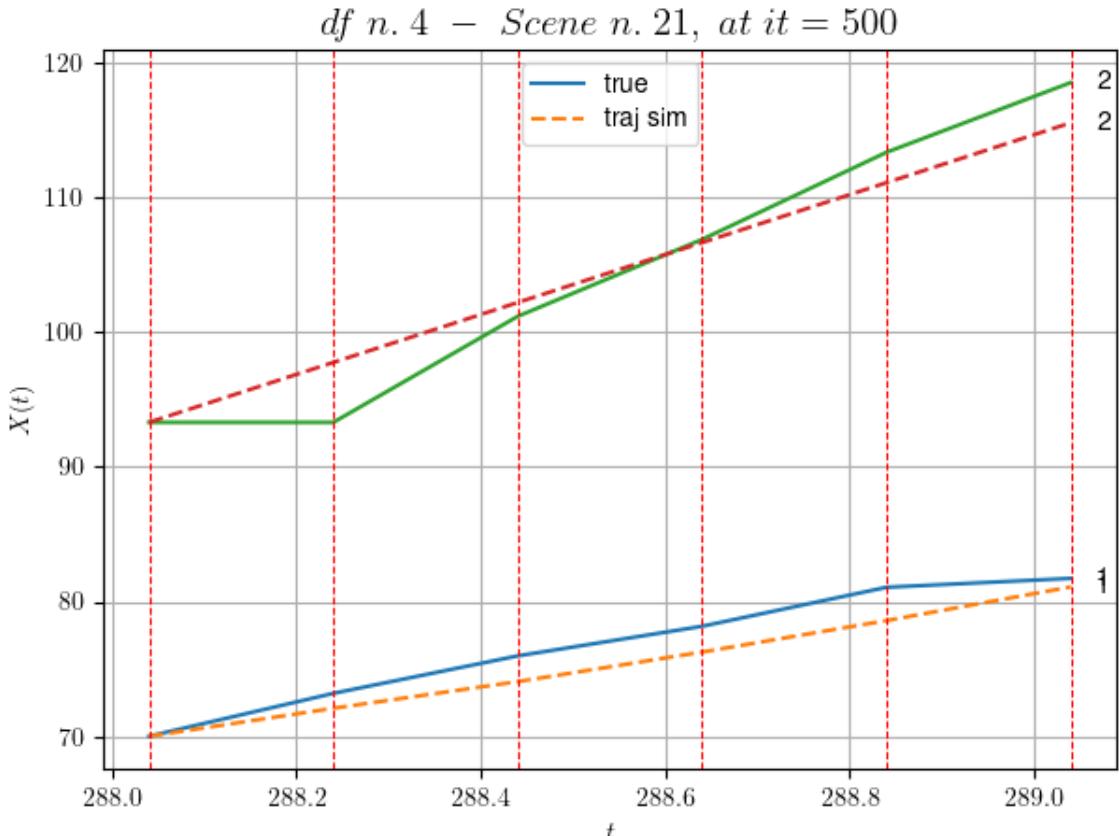
```
* v_ann: [11.686598777770996, 22.24789971530882]
```

---

```
- Time interval n.4: [288.84, 289.04]
* y_true: [3.31041621]
* v_ann: [12.511067390441895, 22.24789971530882]
```

---

```
* err= 4.164735033532641
* Learning rate NN = 1.9371018424862996e-05
* diff = 0.018452427888727918
```



For scene 21/69

```
* use LR_NN=5e-05 with err=11.331279879579752 at it=24
* v0_scn_mean = 22.55798372663796
* MAE = 3.9150024030906314
```

---



---

df n.4, scene n.22/69

---



---

We have 6 time intervals inside [301.64,302.84]

```
- Time interval n.0: [301.64, 301.84]
* y_true: [26.55139863]
* v_ann: [23.731796264648438, 22.5292526311549]
```

---



---

```
- Time interval n.1: [301.84, 302.04]
```

```
* y_true: [20.20126147]
* v_ann: [23.72191619873047, 22.5292526311549]
```

---

```
- Time interval n.2: [302.04, 302.24]
* y_true: [22.80164674]
* v_ann: [23.778091430664062, 22.5292526311549]
```

---

```
- Time interval n.3: [302.24, 302.44]
* y_true: [24.90208832]
* v_ann: [21.79948616027832, 22.5292526311549]
```

---

```
- Time interval n.4: [302.44, 302.64]
* y_true: [19.90190261]
* v_ann: [23.07083511352539, 22.5292526311549]
```

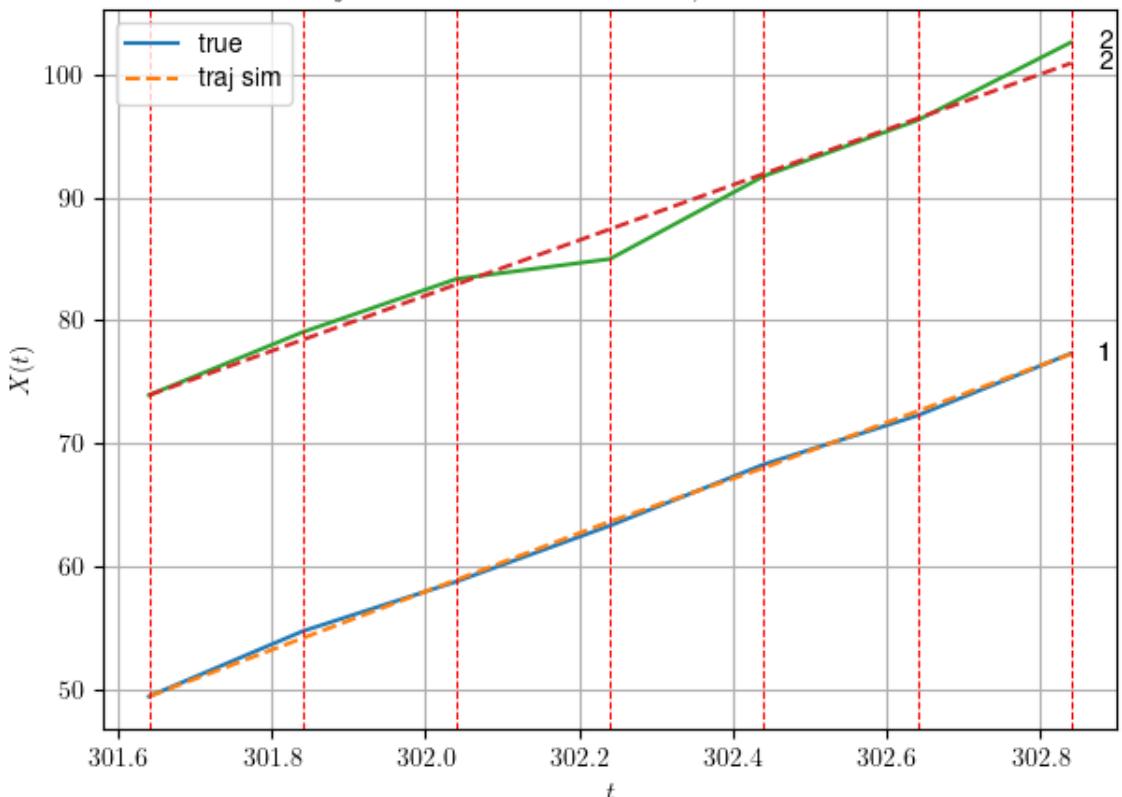
---

```
- Time interval n.5: [302.64, 302.84]
* y_true: [25.30273749]
* v_ann: [23.32961654663086, 22.5292526311549]
```

---

```
* err= 0.7200582441669968
* Learning rate NN = 1.5690524378442205e-05
* diff = 0 0001873200121082570
```

*df n. 4 – Scene n. 22, at it = 500*



For scene 22/69

\* use LR\_NN=5e-05 with err=14.62405226448619 at it=24

```
* vθ_scn_mean = 22.828082525851773
* MAE = 0.7167710446862765
```

---



---

df n.4, scene n.23/69

---



---

We have 3 time intervals inside [320.44, 321.04]

- Time interval n.0: [320.44, 320.64]

- \* y\_true: [19.06248224]

- \* v\_ann: [21.591325759887695, 14.162426648992783]

---

- Time interval n.1: [320.64, 320.84]

- \* y\_true: [25.04354334]

- \* v\_ann: [21.136085510253906, 14.162426648992783]

---

- Time interval n.2: [320.84, 321.04]

- \* y\_true: [15.51237997]

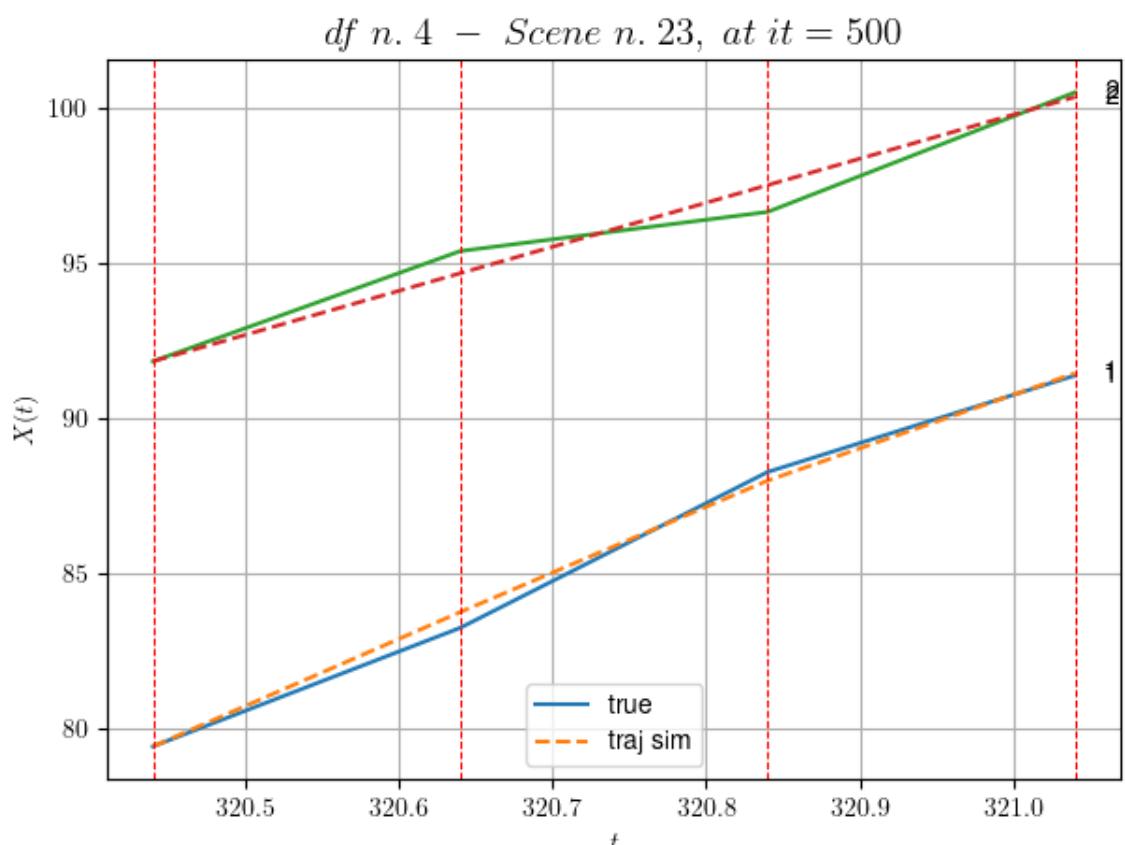
- \* v\_ann: [17.257890701293945, 14.162426648992783]

---

\* err= 0.2012680268432264

\* Learning rate NN = 5.904899080633186e-05

\* diff = 5.4958480864841786e-06



For scene 23/69

```
* use LR_NN=0.0001 with err=18.222167467229916 at it=24
* v0_scn_mean = 14.795929582911922
* MAE = 0.20118682176998867
```

```
=====
```

df n.4, scene n.24/69

```
=====
```

```
We have 10 time intervals inside [321.84,323.84]
- Time interval n.0: [321.84, 322.04]
 * y_true: [15.91100184]
 * v_ann: [15.159337997436523, 22.81009773351766]
```

```
- Time interval n.1: [322.04, 322.24]
 * y_true: [21.52151253]
 * v_ann: [15.600107192993164, 22.81009773351766]
```

```
- Time interval n.2: [322.24, 322.44]
 * y_true: [17.33136036]
 * v_ann: [16.130239486694336, 22.81009773351766]
```

```
- Time interval n.3: [322.44, 322.64]
 * y_true: [13.37117584]
 * v_ann: [16.661828994750977, 22.81009773351766]
```

```
- Time interval n.4: [322.64, 322.84]
 * y_true: [20.11196206]
 * v_ann: [16.389432907104492, 22.81009773351766]
```

```
- Time interval n.5: [322.84, 323.04]
 * y_true: [19.00199356]
 * v_ann: [16.990737915039062, 22.81009773351766]
```

```
- Time interval n.6: [323.04, 323.24]
 * y_true: [9.05104347]
 * v_ann: [17.92059326171875, 22.81009773351766]
```

```
- Time interval n.7: [323.24, 323.44]
 * y_true: [12.23150016]
 * v_ann: [18.14864730834961, 22.81009773351766]
```

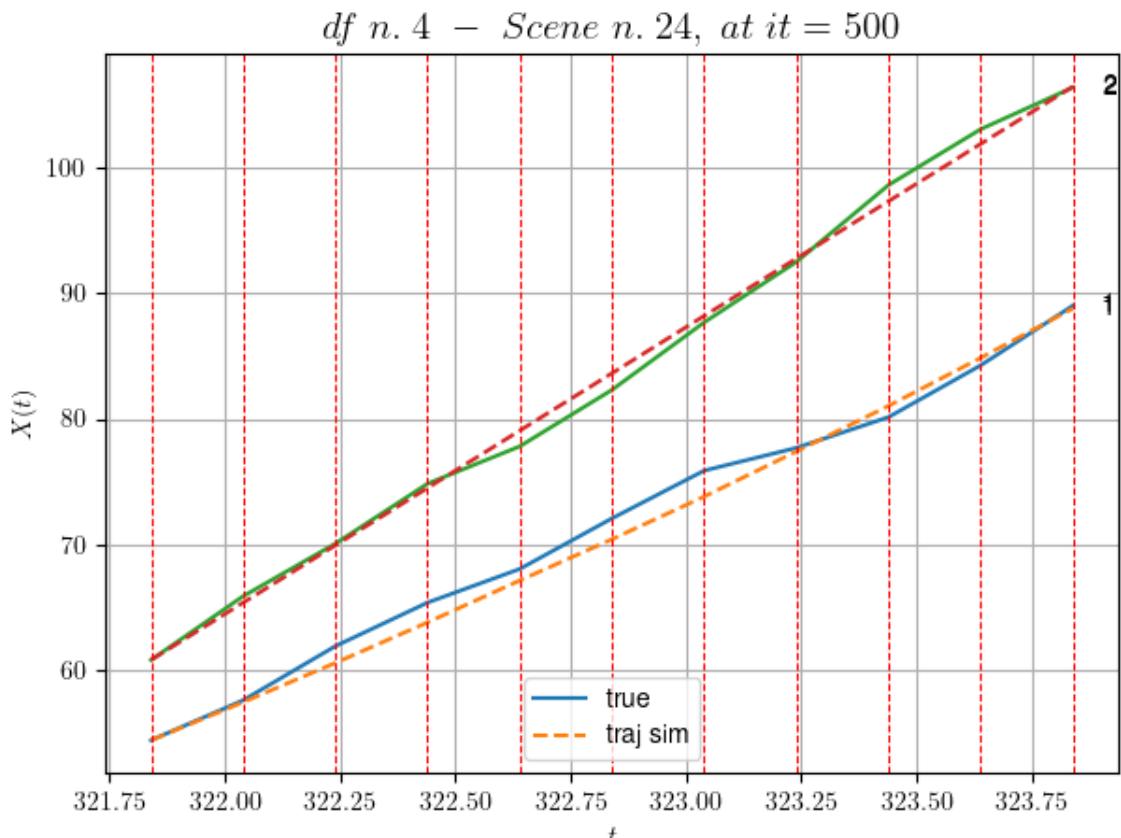
```
- Time interval n.8: [323.44, 323.64]
* y_true: [20.60275578]
* v_ann: [19.11049461364746, 22.81009773351766]
```

```

- Time interval n.9: [323.64, 323.84]
* y_true: [23.75344402]
* v_ann: [19.635700225830078, 22.81009773351766]
```

```

* err= 0.9322906755107147
* Learning rate NN = 0.00013508510892279446
* diff = 0.04586682692508315
```



For scene 24/69

```
* use LR_NN=0.001 with err=37.42235917638561 at it=24
* v0_scn_mean = 23.097693824122622
* MAE = 0.8460705365312955
```

---



---

df n.4, scene n.25/69

---



---

We have 4 time intervals inside [374.24, 375.04]

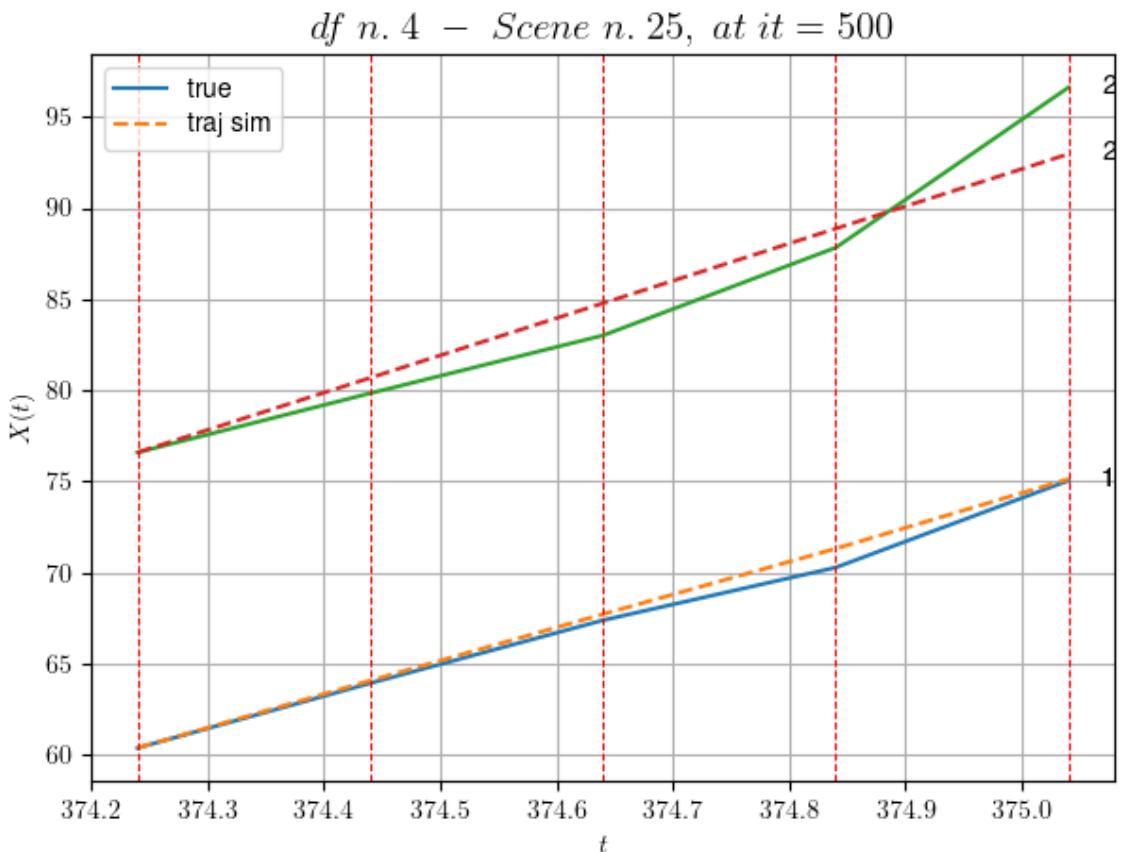
```
- Time interval n.0: [374.24, 374.44]
* y_true: [17.78133038]
* v_ann: [18.48979377746582, 20.47572203693454]
```

- Time interval n.1: [374.44, 374.64]
  - \* y\_true: [17.27142996]
  - \* v\_ann: [18.233997344970703, 20.47572203693454]

- Time interval n.2: [374.64, 374.84]
  - \* y\_true: [14.48134888]
  - \* v\_ann: [17.9857177734375, 20.47572203693454]

- Time interval n.3: [374.84, 375.04]
  - \* y\_true: [23.8524105]
  - \* v\_ann: [19.1047306060791, 20.47572203693454]

```
* err= 1.952450568175451
* Learning rate NN = 4.7829678806010634e-05
* diff = 0.0001180006010001265
```



```
For scene 25/69
* use LR_NN=0.0001 with err=10.127590475718845 at it=24
* v0_scn_mean = 20.8566931553841
* MAE = 1.806038316869919
```

df n.4, scene n.26/69

```
=====
We have 3 time intervals inside [378.64,379.24]
- Time interval n.0: [378.64, 378.84]
 * y_true: [24.80186931]
 * v_ann: [19.20699119567871, 21.9866824487641]
```

```

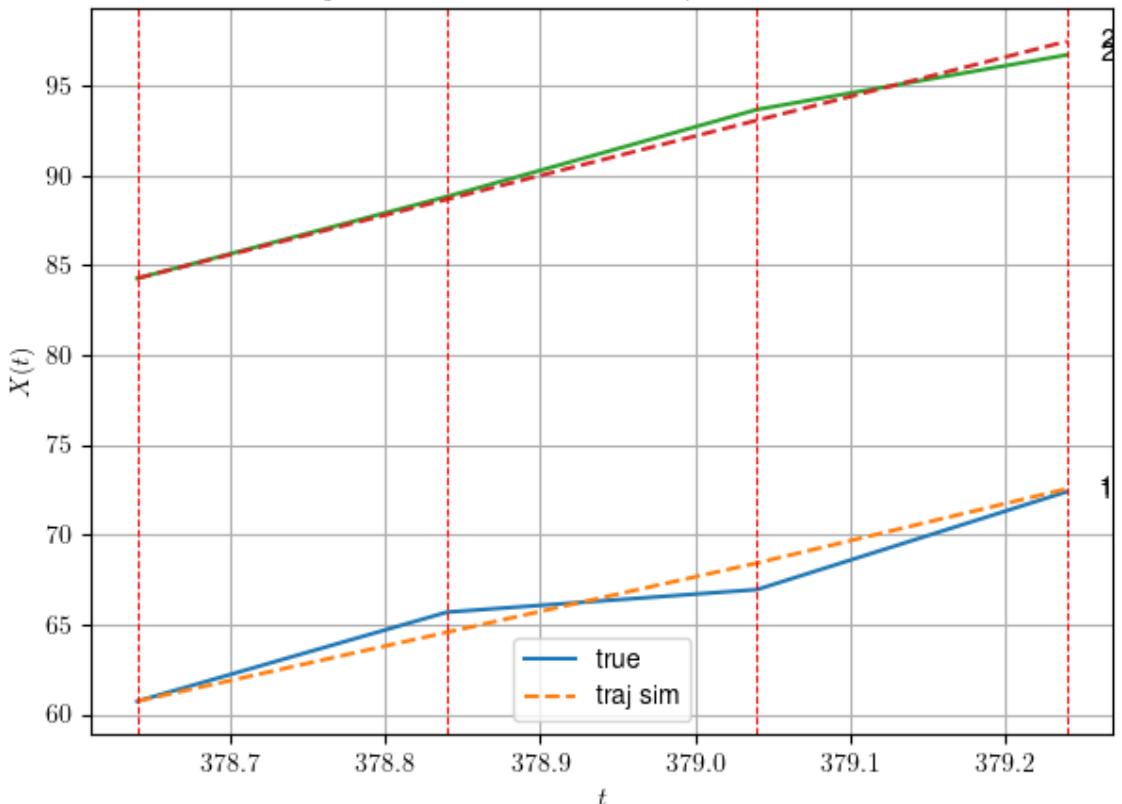
- Time interval n.1: [378.84, 379.04]
 * y_true: [6.27054296]
 * v_ann: [19.262483596801758, 21.9866824487641]
```

```

- Time interval n.2: [379.04, 379.24]
 * y_true: [27.25270249]
 * v_ann: [20.648576736450195, 21.9866824487641]
```

```
*
* err= 0.5528217925828004
* Learning rate NN = 2.952449540316593e-05
* diff = 0 0004435648345038068
```

*df n. 4 – Scene n. 26, at it = 500*



For scene 26/69

```
* use LR_NN=5e-05 with err=5.405212655598326 at it=24
* v0_scn_mean = 22.30721515075301
* MAE = 0.5518072119931945
```

---



---

df n.4, scene n.27/69

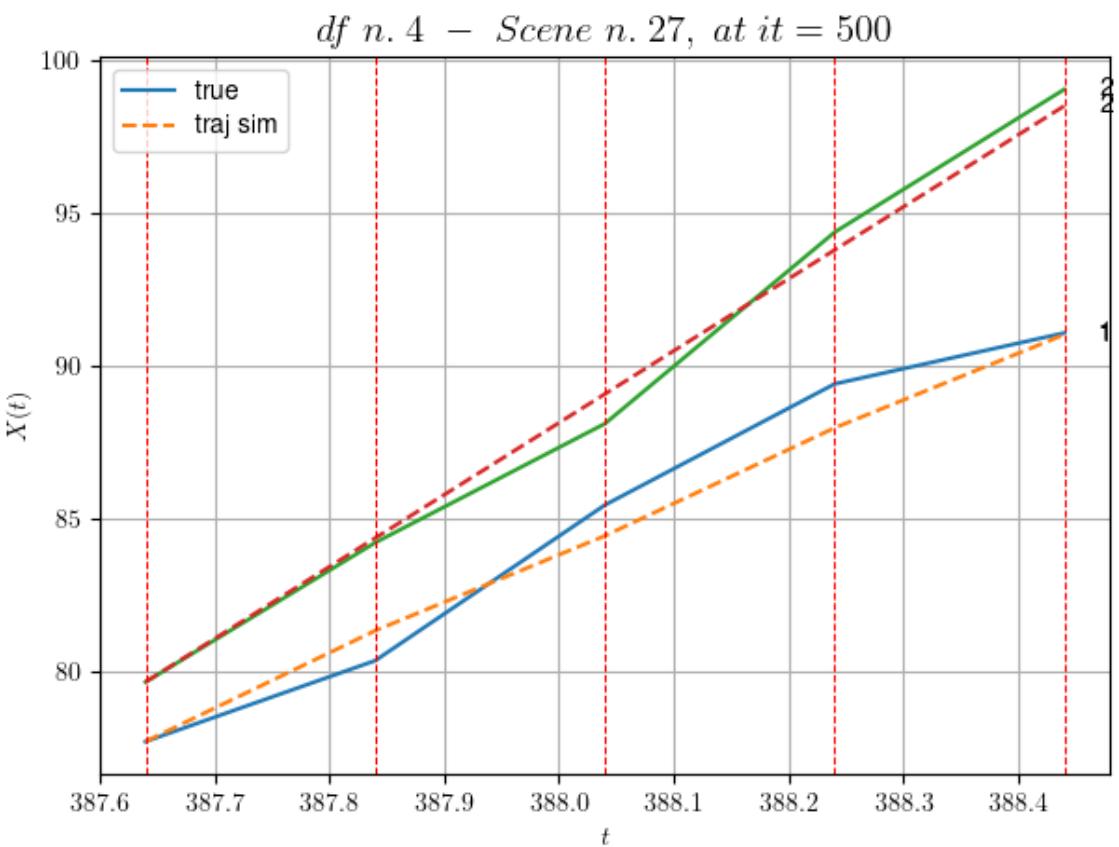
```
=====
=====
We have 4 time intervals inside [387.64,388.44]
- Time interval n.0: [387.64, 387.84]
 * y_true: [13.24162412]
 * v_ann: [18.149864196777344, 23.572406443207264]

- Time interval n.1: [387.84, 388.04]
 * y_true: [25.47337037]
 * v_ann: [15.520774841308594, 23.572406443207264]

- Time interval n.2: [388.04, 388.24]
 * y_true: [19.81289117]
 * v_ann: [17.664541244506836, 23.572406443207264]

- Time interval n.3: [388.24, 388.44]
 * y_true: [8.34132664]
 * v_ann: [15.272942543029785, 23.572406443207264]

* err= 0.5653218387965944
* Learning rate NN = 0.000239148415857926
* diff = 0.000774633587424578
```



For scene 27/69  
 \* use LR\_NN=0.0005 with err=7.565991258090465 at it=24  
 \* v0\_scn\_mean = 23.829510185426344  
 \* MAE = 0.5653218387965944

```
=====
=====
```

df n.4, scene n.28/69

```
=====
=====
```

We have 3 time intervals inside [399.24,399.84]

- Time interval n.0: [399.24, 399.44]
  - \* y\_true: [21.7511121]
  - \* v\_ann: [17.365741729736328, 24.512386475295934]

---

```

```

- Time interval n.1: [399.44, 399.64]
  - \* y\_true: [18.26102056]
  - \* v\_ann: [19.096111297607422, 24.512386475295934]

---

```

```

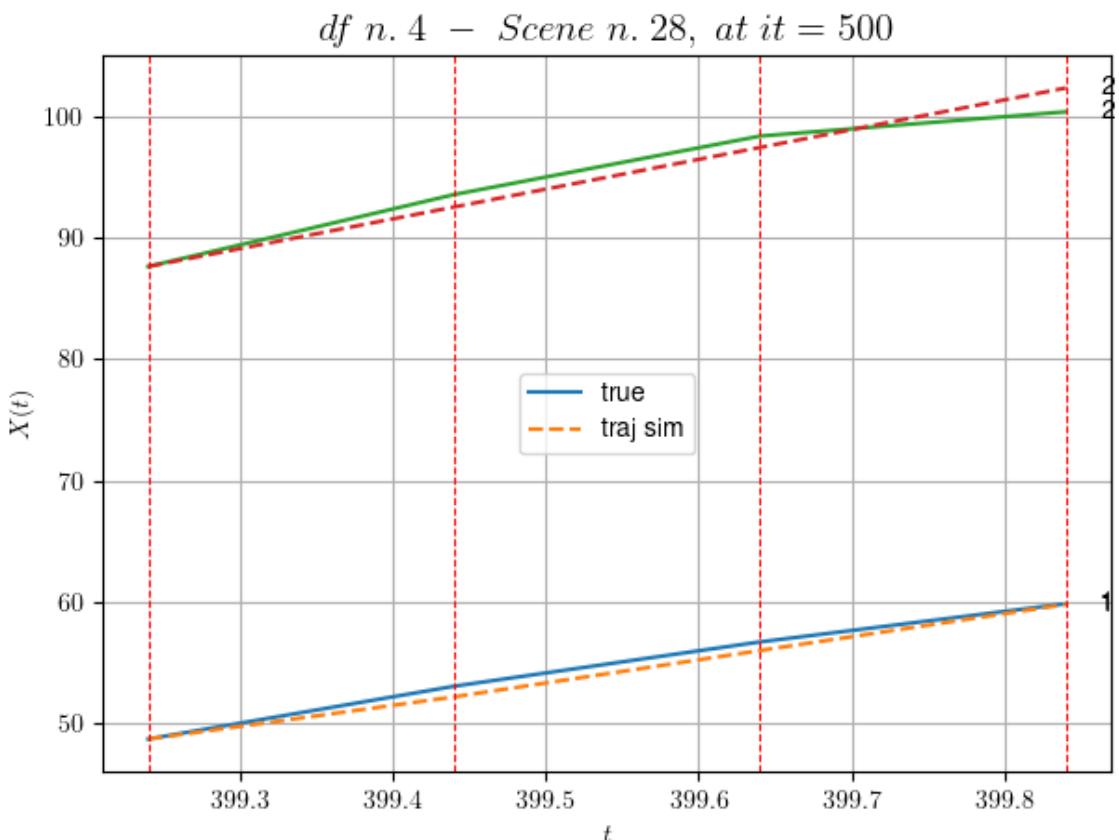
- Time interval n.2: [399.64, 399.84]
  - \* y\_true: [15.72103462]
  - \* v\_ann: [19.00010871887207, 24.512386475295934]

---

```

```

- \* err= 0.8812262423354686
- \* Learning rate NN = 2.952449540316593e-05
- \* diff = 0.00011670353208426132



For scene 28/69

- \* use LR\_NN=5e-05 with err=3.8340625278538805 at it=24
- \* v0\_scn\_mean = 24.731891016242457

\* MAE = 0.8777026672333081

---



---

df n.4, scene n.29/69

---



---

We have 2 time intervals inside [406.24, 406.64]

- Time interval n.0: [406.24, 406.44]
  - \* y\_true: [28.52295146]
  - \* v\_ann: [24.051361083984375, 18.926519541433535]

- 
- Time interval n.1: [406.44, 406.64]

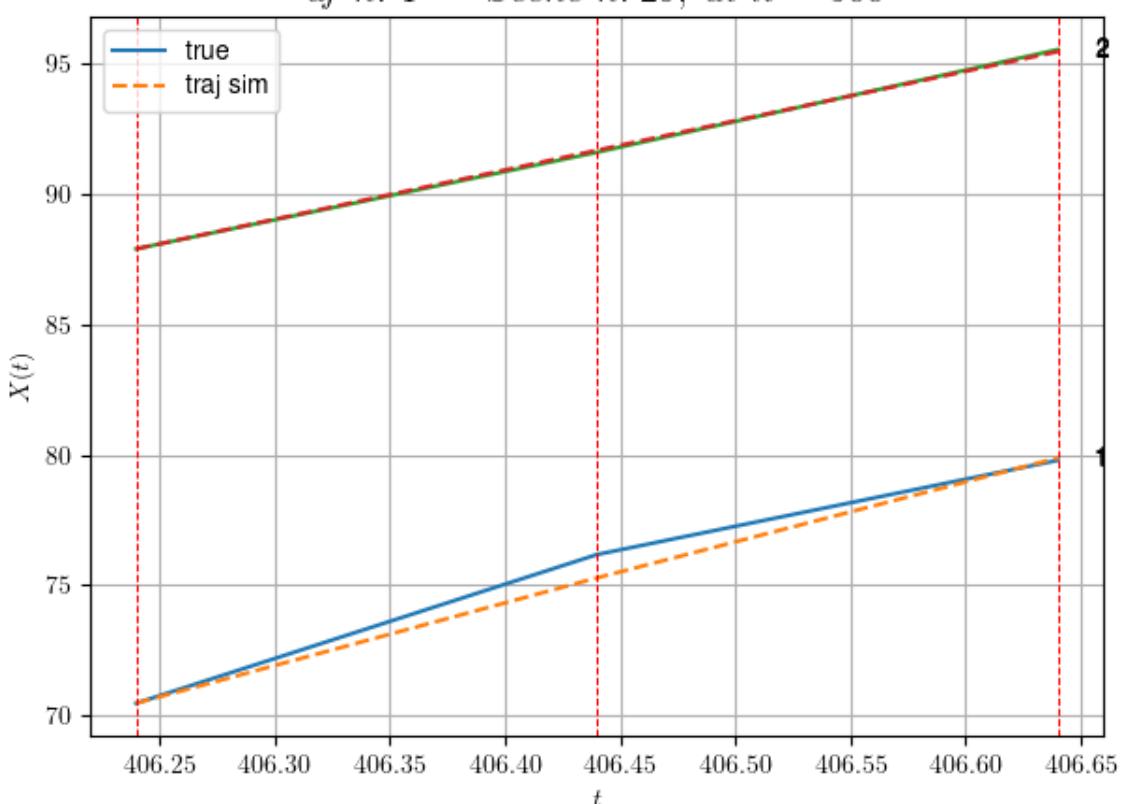
- \* y\_true: [18.07207404]
- \* v\_ann: [23.013248443603516, 18.926519541433535]

\* err= 0.1368353073240598

\* Learning rate NN = 7.289998757187277e-05

\* diff = 0.0008823292449184894

*df n. 4 – Scene n. 29, at it = 500*



For scene 29/69

- \* use LR\_NN=0.0001 with err=4.13380161181031 at it=24
- \* v0\_scn\_mean = 19.36945875969191
- \* MAE = 0.1368353073240598

```
df n.4, scene n.30/69
=====
=====
We have 10 time intervals inside [408.84,410.84]
- Time interval n.0: [408.84, 409.04]
 * y_true: [15.25021324]
 * v_ann: [19.02396011352539, 20.951718350918622]

- Time interval n.1: [409.04, 409.24]
 * y_true: [19.57034716]
 * v_ann: [19.172752380371094, 20.951718350918622]

- Time interval n.2: [409.24, 409.44]
 * y_true: [20.90046989]
 * v_ann: [19.352962493896484, 20.951718350918622]

- Time interval n.3: [409.44, 409.64]
 * y_true: [17.04047168]
 * v_ann: [19.53538703918457, 20.951718350918622]

- Time interval n.4: [409.64, 409.84]
 * y_true: [19.11067999]
 * v_ann: [20.011878967285156, 20.951718350918622]

- Time interval n.5: [409.84, 410.04]
 * y_true: [35.07645673]
 * v_ann: [19.96091079711914, 20.951718350918622]

- Time interval n.6: [410.04, 410.24]
 * y_true: [10.77556615]
 * v_ann: [19.042917251586914, 20.951718350918622]

- Time interval n.7: [410.24, 410.44]
 * y_true: [13.46075357]
 * v_ann: [19.609952926635742, 20.951718350918622]

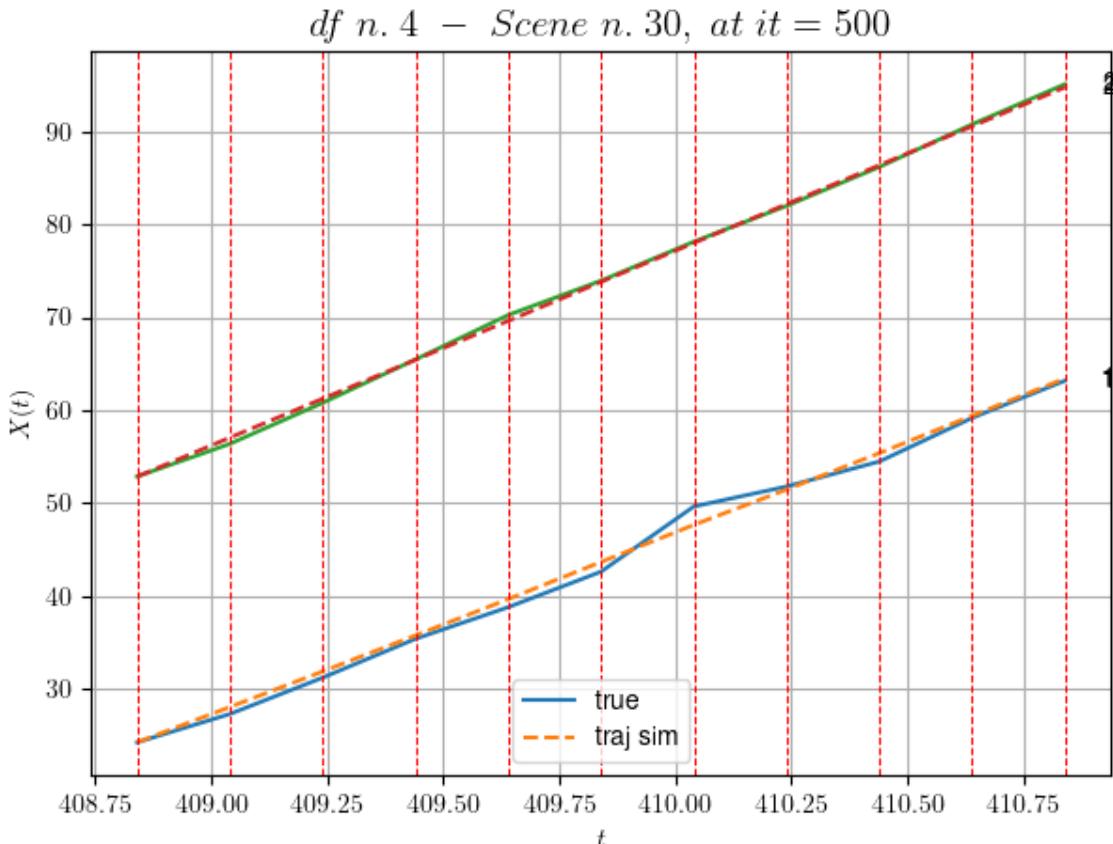
- Time interval n.8: [410.44, 410.64]
 * y_true: [23.47149956]
 * v_ann: [20.107797622680664, 20.951718350918622]

- Time interval n.9: [410.64, 410.84]
```

```
* y_true: [20.00147803]
* v_ann: [20.091796875, 20.951718350918622]
```

---

```
* err= 0.42109084154559656
* Learning rate NN = 1.350850993731001e-06
* diff = 0.0001256505411142000
```



For scene 30/69

```
* use LR_NN=1e-05 with err=56.869981117379766 at it=24
* v0_scn_mean = 21.313649616812782
* MAE = 0.42105830819785284
```

---



---

df n.4, scene n.31/69

---



---

We have 2 time intervals inside [411.84, 412.24]

- Time interval n.0: [411.84, 412.04]
  - \* y\_true: [12.04108576]
  - \* v\_ann: [15.943537712097168, 15.182121050296576]

---

- Time interval n.1: [412.04, 412.24]

- \* y\_true: [18.83181821]
  - \* v\_ann: [14.817802429199219, 15.182121050296576]

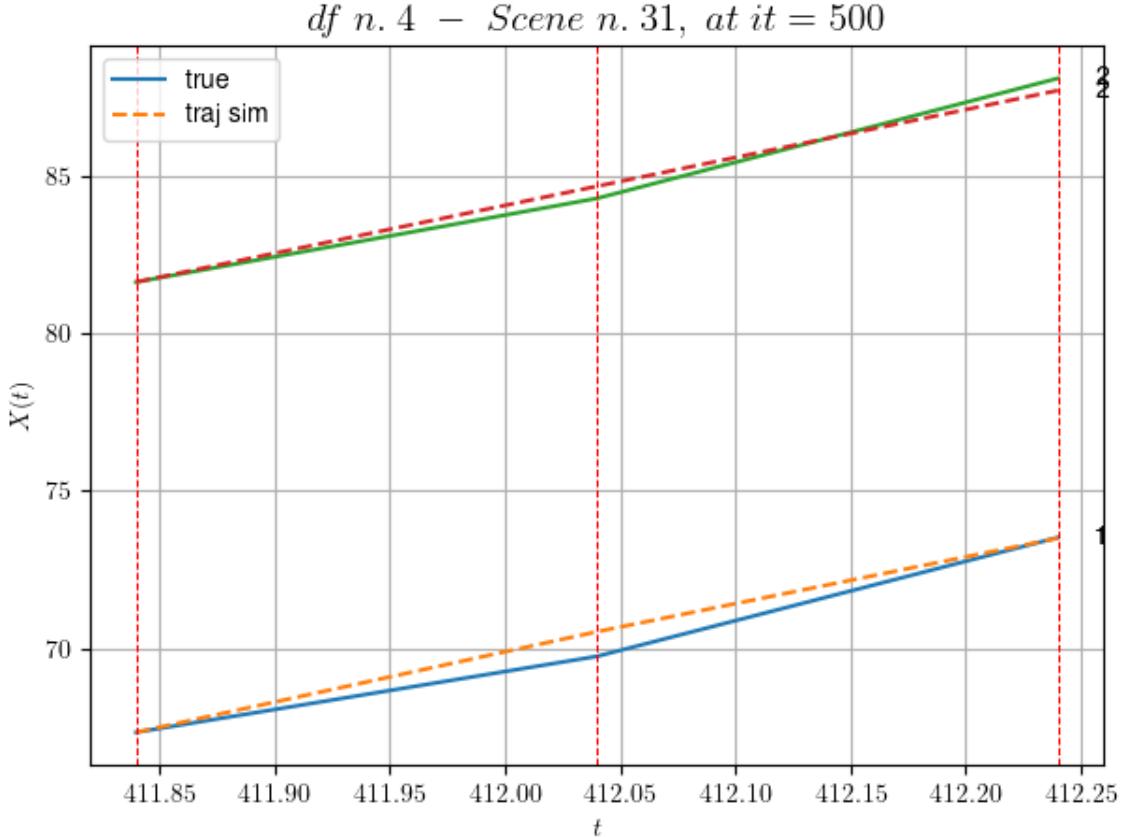
---



---

```
* err= 0.1507784511748857
```

```
* Learning rate NN = 0.00036449998151510954
* diff = 1.5496861538982776e-05
```



For scene 31/69

```
* use LR_NN=0.0005 with err=7.1018594159435615 at it=24
* v0_scn_mean = 15.774836208171843
* MAE = 0.14729743143279297
```

---



---

df n.4, scene n.32/69

---



---

We have 10 time intervals inside [419.84, 421.84]

- Time interval n.0: [419.84, 420.04]
  - \* y\_true: [17.73058344]
  - \* v\_ann: [15.736666679382324, 25.806420226564352]

---

- Time interval n.1: [420.04, 420.24]
  - \* y\_true: [26.13095885]
  - \* v\_ann: [16.96552848815918, 25.806420226564352]

---

- Time interval n.2: [420.24, 420.44]
  - \* y\_true: [16.22073507]
  - \* v\_ann: [16.134567260742188, 25.806420226564352]

---

```
- Time interval n.3: [420.44, 420.64]
* y_true: [31.54187385]
* v_ann: [18.839677810668945, 25.806420226564352]

- Time interval n.4: [420.64, 420.84]
* y_true: [34.75224249]
* v_ann: [19.408203125, 25.806420226564352]

- Time interval n.5: [420.84, 421.04]
* y_true: [6.73053681]
* v_ann: [19.332908630371094, 25.806420226564352]

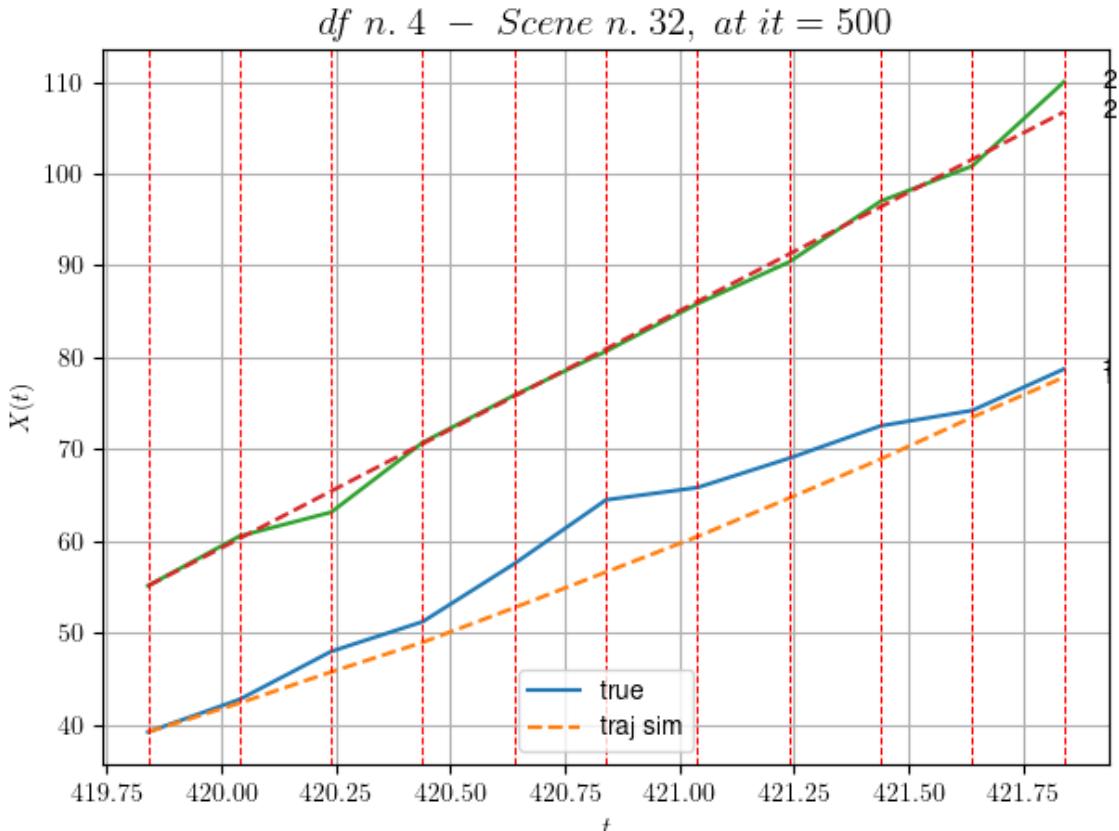
- Time interval n.6: [421.04, 421.24]
* y_true: [15.94137727]
* v_ann: [20.93226432800293, 25.806420226564352]

- Time interval n.7: [421.24, 421.44]
* y_true: [17.65161573]
* v_ann: [21.25890350341797, 25.806420226564352]

- Time interval n.8: [421.44, 421.64]
* y_true: [8.40084391]
* v_ann: [22.810787200927734, 25.806420226564352]

- Time interval n.9: [421.64, 421.84]
* y_true: [22.52258798]
* v_ann: [21.738737106323242, 25.806420226564352]

* err= 7.9301011136116655
* Learning rate NN = 6.754255446139723e-05
* diff = 0.17254329395872947
```



For scene 32/69

```
* use LR_NN=0.0005 with err=15.691047235442403 at it=24
* v0_scn_mean = 25.97416341746962
* MAE = 4.032762941185757
```

---



---

df n.4, scene n.33/69

---



---

We have 5 time intervals inside [439.24, 440.24]

- Time interval n.0: [439.24, 439.44]
  - \* y\_true: [15.24141643]
  - \* v\_ann: [20.693038940429688, 21.563926495541743]

---

- Time interval n.1: [439.44, 439.64]
  - \* y\_true: [28.0128448]
  - \* v\_ann: [20.873706817626953, 21.563926495541743]

---

- Time interval n.2: [439.64, 439.84]
  - \* y\_true: [20.81245375]
  - \* v\_ann: [21.186742782592773, 21.563926495541743]

---

- Time interval n.3: [439.84, 440.04]
  - \* y\_true: [26.46342841]

```
* v_ann: [21.662200927734375, 21.563926495541743]
```

---

```
- Time interval n.4: [440.04, 440.24]
```

```
* y_true: [12.64182746]
```

```
* v_ann: [19.6229305267334, 21.563926495541743]
```

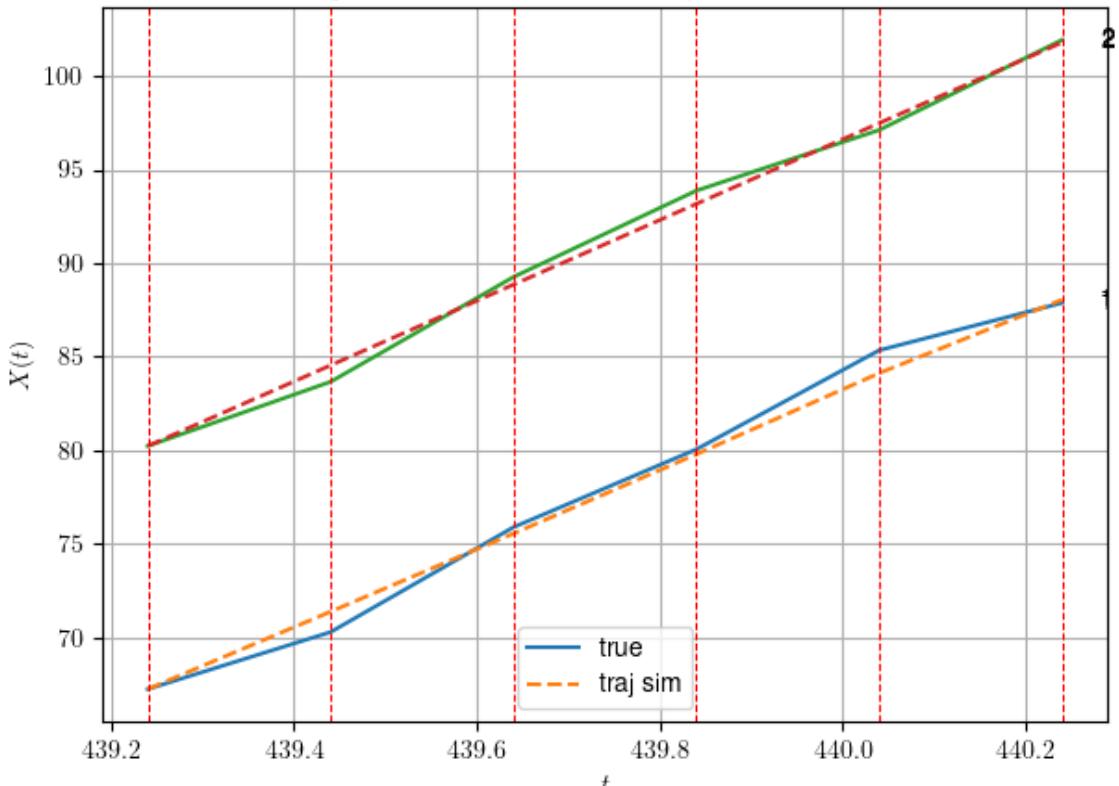
---

```
* err= 0.37395465527809907
```

```
* Learning rate NN = 3.874203684972599e-05
```

```
* diff = 0 0019419263253762087
```

*df n. 4 – Scene n. 33, at it = 500*



For scene 33/69

```
* use LR_NN=0.0001 with err=13.05590010690191 at it=24
```

```
* v0_scn_mean = 21.901369435655702
```

```
* MAE = 0.3707324709991703
```

---



---



---

df n.4, scene n.34/69

---



---



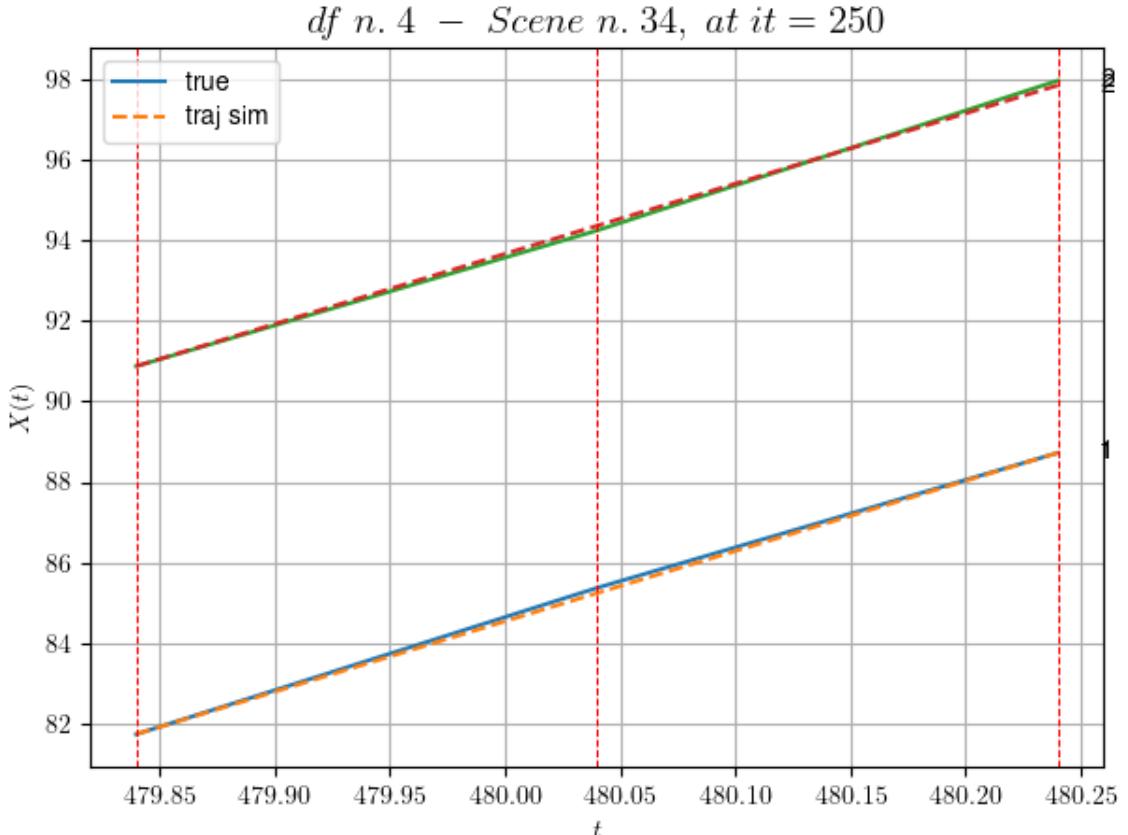
---

We have 2 time intervals inside [479.84, 480.24]

```
* err= 0.007399139703768178
```

```
* Learning rate NN = 0.0004500000213738531
```

```
* diff = 5.296291642111622e-07
```



For scene 34/69

- \* use LR\_NN=0.0005 with err=5.163713482976977 at it=24
- \* v0\_scn\_mean = 18.447542569451727
- \* MAE = 0.007057248657116046

---



---

df n.4, scene n.35/69

---



---

We have 2 time intervals inside [481.24, 481.64]

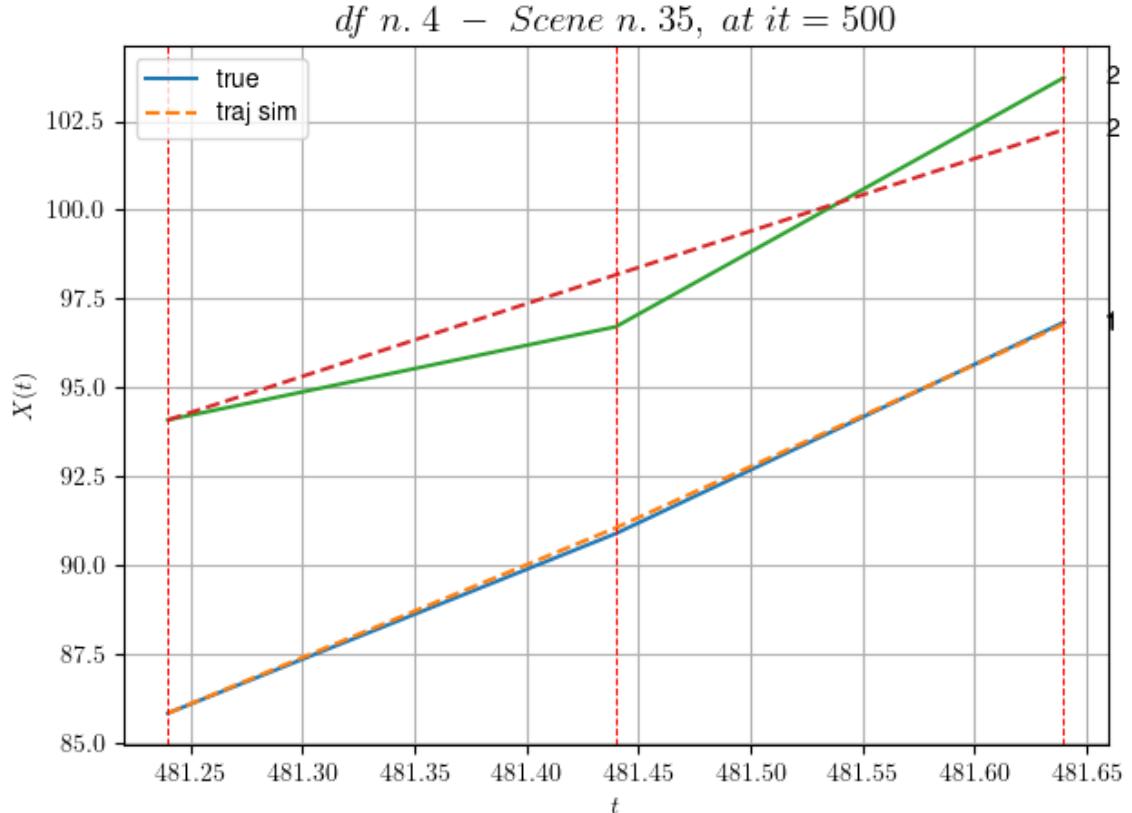
- Time interval n.0: [481.24, 481.44]
  - \* y\_true: [25.25379303]
  - \* v\_ann: [26.060317993164062, 20.40371725522857]

---

- Time interval n.1: [481.44, 481.64]
  - \* y\_true: [29.69507773]
  - \* v\_ann: [28.60298728942871, 20.40371725522857]

---

- \* err= 0.7156986586892637
- \* Learning rate NN = 0.00036449998151510954
- \* diff = 0.0027183301544893013



For scene 35/69

- \* use LR\_NN=0.0005 with err=3.1925315306069924 at it=24
  - \* v0\_scn\_mean = 20.78756856494623
  - \* MAE = 0.7156986586892637
- 
- 

df n.4, scene n.36/69

---



---

We have 5 time intervals inside [500.04, 501.04]

- Time interval n.0: [500.04, 500.24]
    - \* y\_true: [29.61179117]
    - \* v\_ann: [19.838232040405273, 21.189572495102713]
- 

- Time interval n.1: [500.24, 500.44]
    - \* y\_true: [8.70055091]
    - \* v\_ann: [20.954540252685547, 21.189572495102713]
- 

- Time interval n.2: [500.44, 500.64]
    - \* y\_true: [13.8710234]
    - \* v\_ann: [19.630550384521484, 21.189572495102713]
- 

- Time interval n.3: [500.64, 500.84]
  - \* y\_true: [20.78170164]
  - \* v\_ann: [18.86079978942871, 21.189572495102713]

```

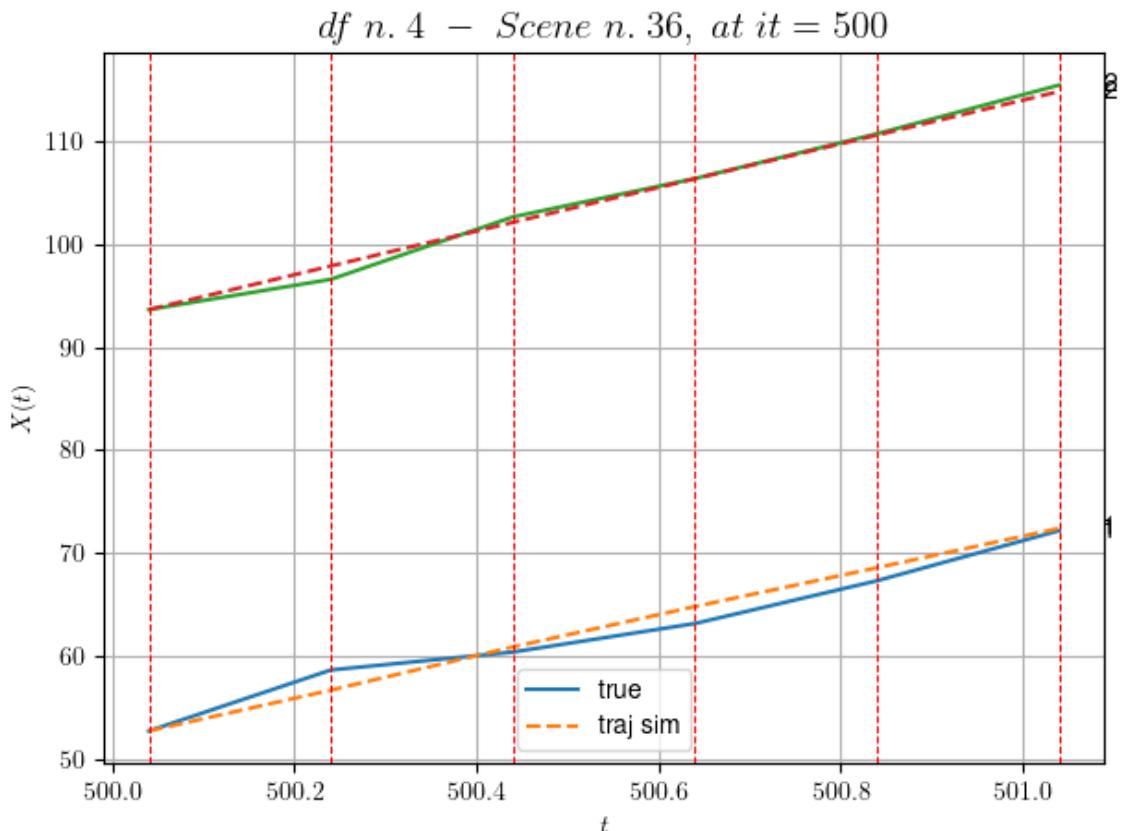
- Time interval n.4: [500.84, 501.04]
 * y_true: [24.32227348]
 * v_ann: [19.115427017211914, 21.189572495102713]

```

```

* err= 0.8995674906193821
* Learning rate NN = 3.874203684972599e-06
* diff = 0.014148285485723555

```



For scene 36/69

```

* use LR_NN=1e-05 with err=13.938217599023588 at it=24
* v0_scn_mean = 21.541989595231215
* MAE = 0.8883496994478364

```

---

df n.4, scene n.37/69

---

```

We have 12 time intervals inside [566.84,569.24]
- Time interval n.0: [566.84, 567.04]
 * y_true: [18.52025877]
 * v_ann: [20.695493698120117, 20.028487582198082]

```

```

- Time interval n.1: [567.04, 567.24]
 * y_true: [19.89036758]

```

\* v\_ann: [20.553041458129883, 20.028487582198082]

- Time interval n.2: [567.24, 567.44]  
\* y\_true: [15.89035891]  
\* v\_ann: [20.39630126953125, 20.028487582198082]

- Time interval n.3: [567.44, 567.64]  
\* y\_true: [20.75058637]  
\* v\_ann: [20.5245361328125, 20.028487582198082]

- Time interval n.4: [567.64, 567.84]  
\* y\_true: [26.61094751]  
\* v\_ann: [20.28818130493164, 20.028487582198082]

- Time interval n.5: [567.84, 568.04]  
\* y\_true: [21.26091658]  
\* v\_ann: [20.641746520996094, 20.028487582198082]

- Time interval n.6: [568.04, 568.24]  
\* y\_true: [24.01126271]  
\* v\_ann: [20.698287963867188, 20.028487582198082]

- Time interval n.7: [568.24, 568.44]  
\* y\_true: [16.94101506]  
\* v\_ann: [20.52301788330078, 20.028487582198082]

- Time interval n.8: [568.44, 568.64]  
\* y\_true: [24.62174309]  
\* v\_ann: [20.602458953857422, 20.028487582198082]

- Time interval n.9: [568.64, 568.84]  
\* y\_true: [23.33189445]  
\* v\_ann: [20.520769119262695, 20.028487582198082]

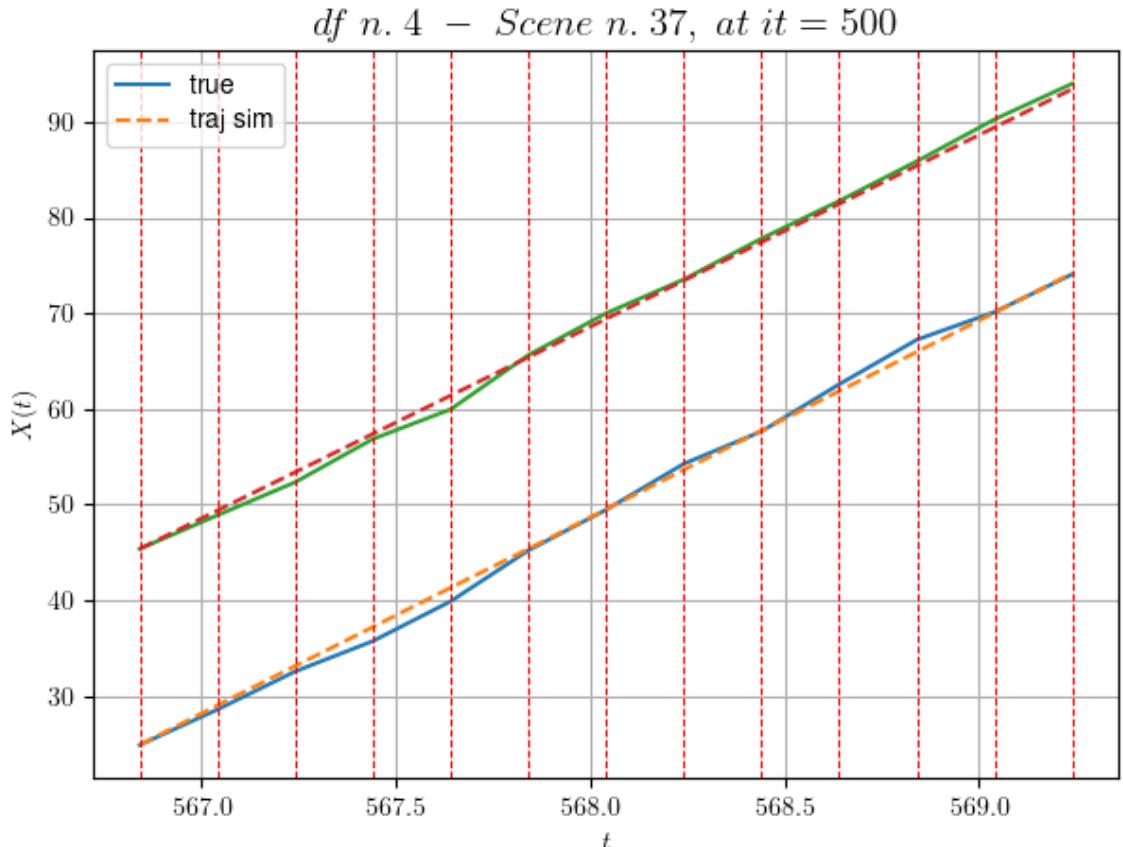
- Time interval n.10: [568.84, 569.04]  
\* y\_true: [14.44130319]  
\* v\_ann: [20.4971981048584, 20.028487582198082]

- Time interval n.11: [569.04, 569.24]  
\* y\_true: [19.77200048]

\* v\_ann: [20.645139694213867, 20.028487582198082]

---

\* err= 0.4959616088738035  
 \* Learning rate NN = 8.862932190822903e-06



For scene 37/69

\* use LR\_NN=0.0001 with err=96.51842960987533 at it=24  
 \* v0\_scn\_mean = 20.427348078833464  
 \* MAE = 0.4909160634721879

---



---

df n.4, scene n.38/69

---



---

We have 3 time intervals inside [584.84, 585.44]

- Time interval n.0: [584.84, 585.04]
  - \* y\_true: [32.88340113]
  - \* v\_ann: [28.002262115478516, 25.889440529704004]

---

- Time interval n.1: [585.04, 585.24]

- \* y\_true: [28.11341581]
- \* v\_ann: [28.13983726501465, 25.889440529704004]

---

- Time interval n.2: [585.24, 585.44]

- \* y\_true: [23.09315201]

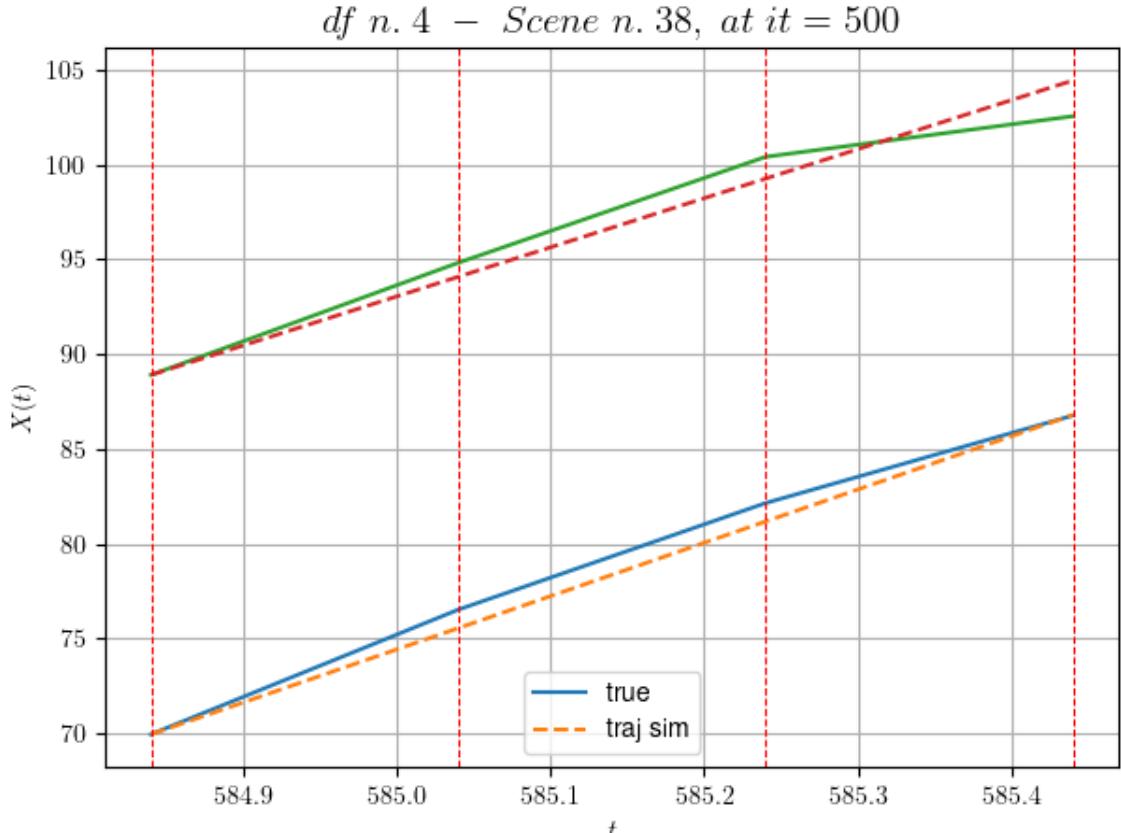
```
* v_ann: [28.1115779876709, 25.889440529704004]
```

---



---

```
* err= 0.9154018943322646
* Learning rate NN = 2.952449540316593e-05
* diff = 0.0002104468083837796
```



For scene 38/69

```
* use LR_NN=5e-05 with err=2.612255610945804 at it=24
* v0_scn_mean = 26.053862908484486
* MAE = 0.9130043027983183
```

---



---

df n.4, scene n.39/69

---



---

We have 2 time intervals inside [7.04, 7.44]

- Time interval n.0: [7.04, 7.24]
  - \* y\_true: [ 8.37556318 26.1843701 ]
  - \* v\_ann: [17.163076400756836, 18.28974151611328, 36.15423035610226]

---



---

- Time interval n.1: [7.24, 7.44]
  - \* y\_true: [12.54090657 23.03433042]
  - \* v\_ann: [17.909345626831055, 16.8866024017334, 36.15423035610226]

---

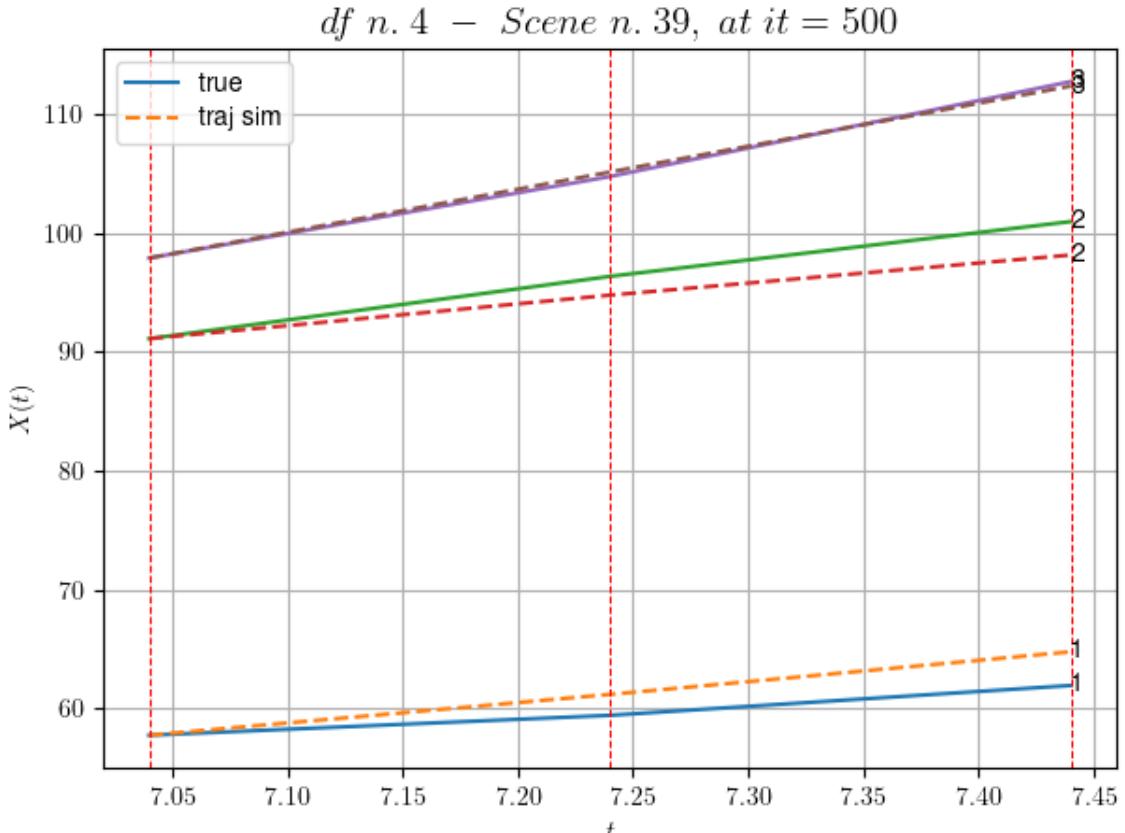


---

```

* err= 2.4188824999276832
* Learning rate NN = 0.00036449998151510954
* diff = 0.00047957702671785896

```



For scene 39/69

```

* use LR_NN=0.0005 with err=12.054274585671907 at it=24
* v0_scn_mean = 35.78497681104772
* MAE = 1.4978854771648267

```

df n.4, scene n.40/69

---



---

We have 2 time intervals inside [19.84, 20.24]

- Time interval n.0: [19.84, 20.04]
  - \* y\_true: [38.50393497 35.76621737]
  - \* v\_ann: [30.818649291992188, 27.667011260986328, 2

6.058966670570218]

---

- Time interval n.1: [20.04, 20.24]
  - \* y\_true: [14.10165462 33.63672046]
  - \* v\_ann: [32.830753326416016, 29.210033416748047, 2

6.058966670570218]

---



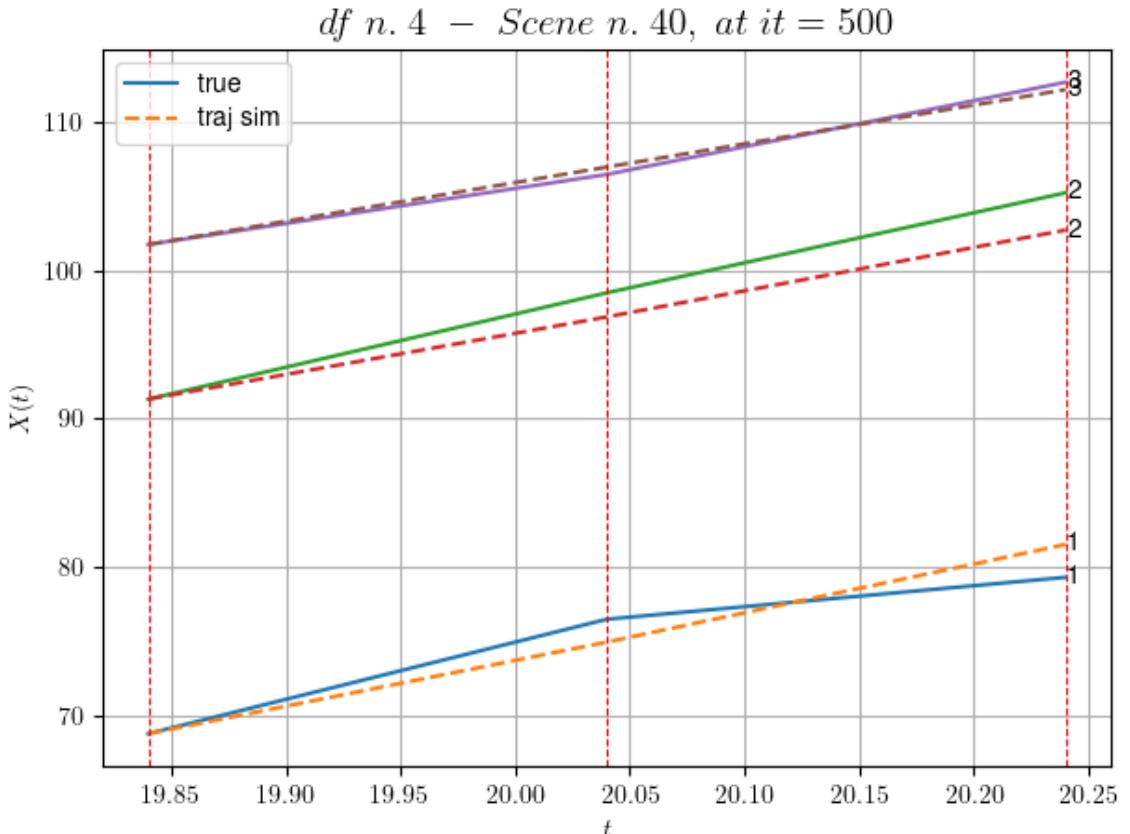
---

```

* err= 1.8482962211224898
* Learning rate NN = 7.289998757187277e-05

```

\* diff = 0.01939490578241143



For scene 40/69

\* use LR\_NN=0.0001 with err=10.533900741300265 at it=24  
 \* v0\_scn\_mean = 26.295428493392105  
 \* MAE = 1.8482962211224898

---



---

df n.4, scene n.41/69

---



---

We have 5 time intervals inside [23.64, 24.64]

- Time interval n.0: [23.64, 23.84]
  - \* y\_true: [16.50112189 27.57447859]
  - \* v\_ann: [15.691451072692871, 16.806127548217773, 2 5.974575559418614]

---

- Time interval n.1: [23.84, 24.04]
  - \* y\_true: [13.80103575 15.46275359]
  - \* v\_ann: [21.731752395629883, 17.358346939086914, 2 5.974575559418614]

---

- Time interval n.2: [24.04, 24.24]
  - \* y\_true: [18.55153987 13.07248815]
  - \* v\_ann: [14.495981216430664, 16.561168670654297, 2 5.974575559418614]

```

 - Time interval n.3: [24.24, 24.44]

 * y_true: [15.75144675 20.6942352]

 * v_ann: [15.649466514587402, 16.719011306762695, 2

5.974575559418614]

```

```

 - Time interval n.4: [24.44, 24.64]

 * y_true: [8.80086699 23.00509018]

 * v_ann: [18.1634521484375, 17.31679916381836, 25.9

74575559418614]

```

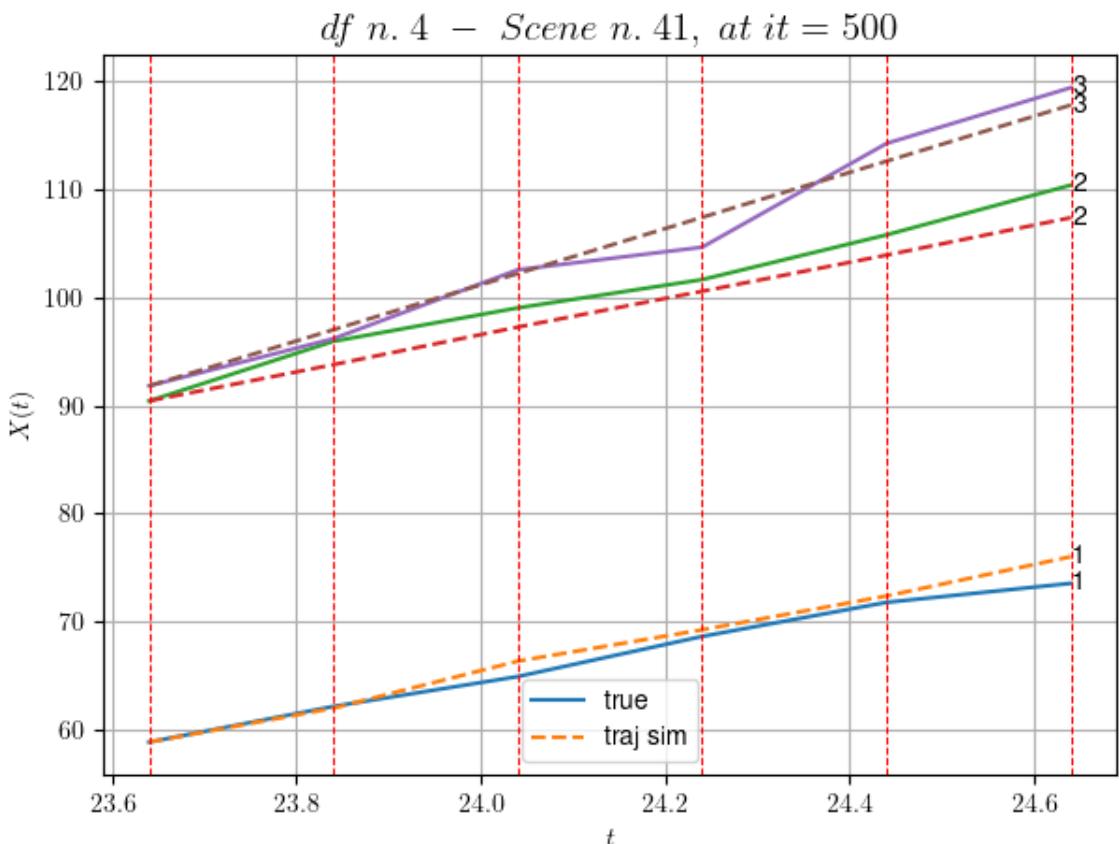
```

* err= 2.4477107931383917

* Learning rate NN = 0.0003874204121530056

* diff = 0.1005000870002021700

```



For scene 41/69

```

* use LR_NN=0.001 with err=36.67820886475529 at it=24
* v0_scn_mean = 26.21610084512065
* MAE = 2.4477107931383917

```

---



---

df n.4, scene n.42/69

---



---

```

=====

=====

We have 6 time intervals inside [80.24,81.44]

- Time interval n.0: [80.24, 80.44]

 * y_true: [20.8407888 28.56113721]

```

```
* v_ann: [25.915958404541016, 28.475984573364258, 2
2.367774273874392]

- Time interval n.1: [80.44, 80.64]
* y_true: [28.49133895 28.481454]
* v_ann: [25.87808609008789, 26.581621170043945, 2
2.367774273874392]

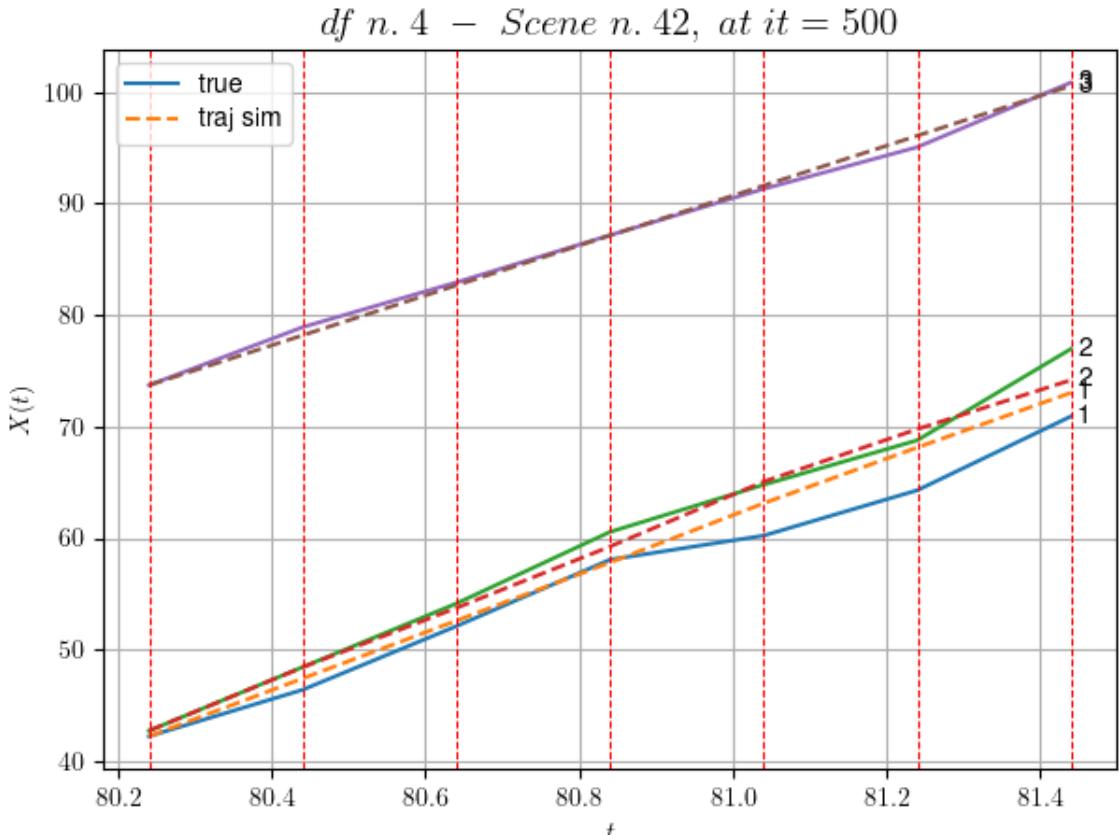
- Time interval n.2: [80.64, 80.84]
* y_true: [29.84173661 32.11200361]
* v_ann: [26.10447120666504, 27.543628692626953, 2
2.367774273874392]

- Time interval n.3: [80.84, 81.04]
* y_true: [10.79069268 21.14157827]
* v_ann: [26.55668067932129, 29.09895133972168, 22.
367774273874392]

- Time interval n.4: [81.04, 81.24]
* y_true: [20.33152897 19.96178137]
* v_ann: [25.03758430480957, 23.539443969726562, 2
2.367774273874392]

- Time interval n.5: [81.24, 81.44]
* y_true: [33.14293198 40.94411969]
* v_ann: [24.536596298217773, 22.004531860351562, 2
2.367774273874392]

* err= 1.9775801499635681
* Learning rate NN = 0.00015690525469835848
* diff = 0.0331676168512125
```



For scene 42/69

- \* use LR\_NN=0.0005 with err=73.86155700378482 at it=24
- \* v0\_scn\_mean = 22.82570747477154
- \* MAE = 1.400900044422775

---



---

df n.4, scene n.43/69

---



---

We have 4 time intervals inside [89.04, 89.84]

- Time interval n.0: [89.04, 89.24]
  - \* y\_true: [19.34082001 24.8230577 ]
  - \* v\_ann: [19.633630752563477, 20.355091094970703, 3

2.7754316326024]

---

- Time interval n.1: [89.24, 89.44]
  - \* y\_true: [14.120693 17.32233598]
  - \* v\_ann: [19.757661819458008, 20.506505966186523, 3

2.7754316326024]

---

- Time interval n.2: [89.44, 89.64]
  - \* y\_true: [18.19104002 31.50485669]
  - \* v\_ann: [19.08631706237793, 19.614913940429688, 3

2.7754316326024]

---

```

- Time interval n.3: [89.64, 89.84]

* y_true: [22.07139916 11.31182118]

* v_ann: [19.537811279296875, 19.955413818359375, 3

2.7754316326024]

```

```

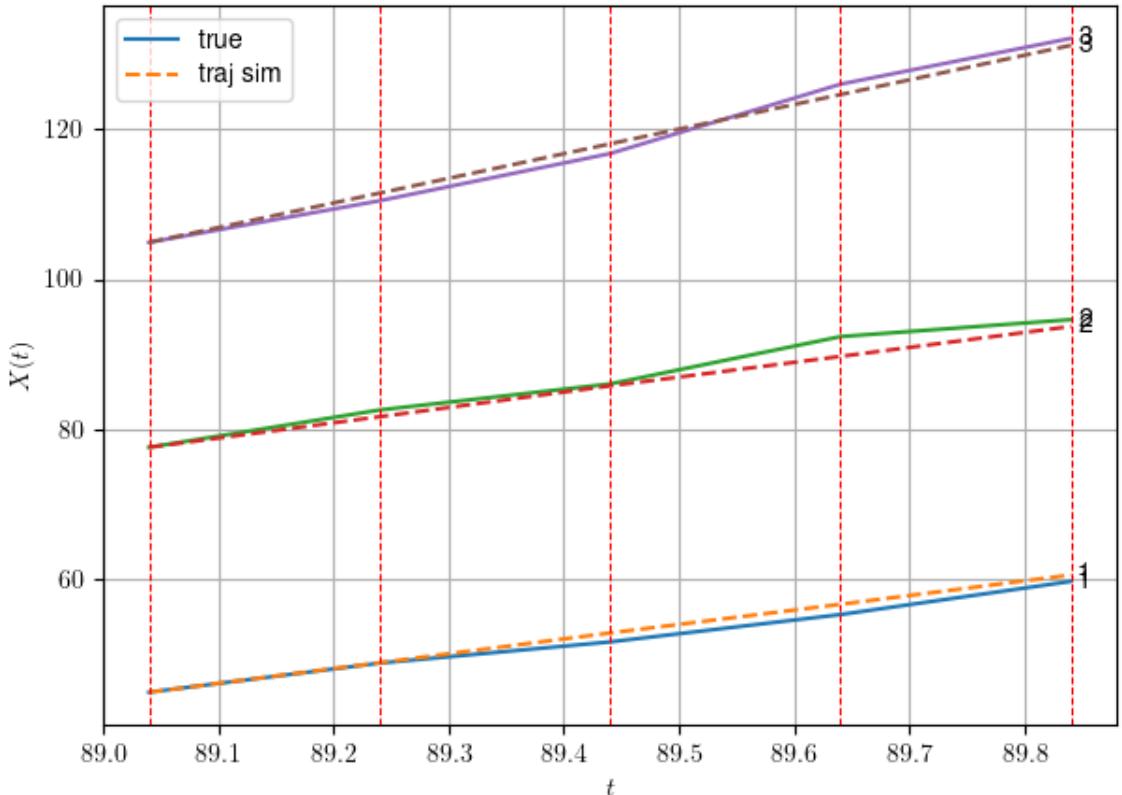
* err= 1.2090725242284566

* Learning rate NN = 2.3914839403005317e-05

* diff = 0.001224021781177198

```

*df n. 4 – Scene n. 43, at it = 500*



For scene 43/69

```

* use LR_NN=5e-05 with err=3.9405496607595722 at it=24

* v0_scn_mean = 32.60890585925712

* MAE = 1.1971554661493202
=====
```

*df n.4, scene n.44/69*

We have 6 time intervals inside [96.44, 97.64]

```

- Time interval n.0: [96.44, 96.64]

* y_true: [16.86045215 20.08121647]

* v_ann: [18.917743682861328, 18.466337203979492, 1

8.401280606024496]
=====
```

```

- Time interval n.1: [96.64, 96.84]

* y_true: [17.24055532 8.93061591]
=====
```

```
* v_ann: [18.862592697143555, 18.448829650878906, 1
8.401280606024496]

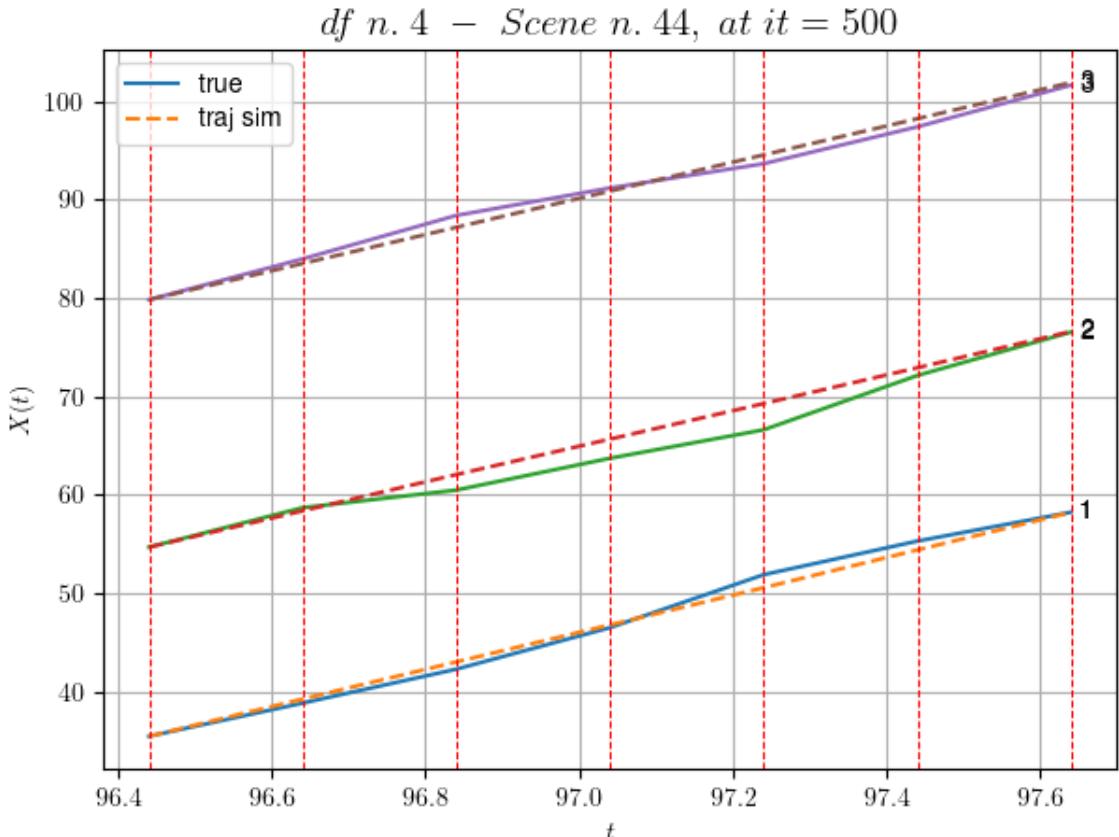
- Time interval n.2: [96.84, 97.04]
* y_true: [21.11081641 16.18118624]
* v_ann: [18.825511932373047, 18.01662254333496, 1
8.401280606024496]

- Time interval n.3: [97.04, 97.24]
* y_true: [26.9212791 14.46120094]
* v_ann: [18.91587257385254, 18.065963745117188, 1
8.401280606024496]

- Time interval n.4: [97.24, 97.44]
* y_true: [17.07093447 27.60253797]
* v_ann: [19.17874526977539, 18.192541122436523, 1
8.401280606024496]

- Time interval n.5: [97.44, 97.64]
* y_true: [14.70092006 22.05229805]
* v_ann: [19.108768463134766, 18.470176696777344, 1
8.401280606024496]

* err= 0.9912202094314208
* Learning rate NN = 1.5690524378442205e-05
* diff = 0 00570120008632083555
```



For scene 44/69

```
* use LR_NN=5e-05 with err=31.74738177711428 at it=24
* v0_scn_mean = 19.09720324890563
* MAE = 0.8994123368317261
```

---



---

df n.4, scene n.45/69

---



---

We have 7 time intervals inside [182.24,183.64]

- Time interval n.0: [182.24, 182.44]
  - \* y\_true: [18.61043577 13.125309 ]
  - \* v\_ann: [19.257749557495117, 19.347206115722656, 2

0.773199567272325]

---

- Time interval n.1: [182.44, 182.64]
  - \* y\_true: [12.51734154 21.64870909]
  - \* v\_ann: [18.828310012817383, 19.290380477905273, 2

0.773199567272325]

---

- Time interval n.2: [182.64, 182.84]
  - \* y\_true: [15.03048681 24.29091592]
  - \* v\_ann: [19.229881286621094, 19.252208709716797, 2

0.773199567272325]

---

```

- Time interval n.3: [182.84, 183.04]

* y_true: [10.23036632 31.71160501]

* v_ann: [19.201059341430664, 19.258541107177734, 2

0.773199567272325]

- Time interval n.4: [183.04, 183.24]

* y_true: [15.12061978 22.63128316]

* v_ann: [19.204282760620117, 19.283666610717773, 2

0.773199567272325]

- Time interval n.5: [183.24, 183.44]

* y_true: [17.50081627 28.99215837]

* v_ann: [19.205272674560547, 19.28048324584961, 2

0.773199567272325]

- Time interval n.6: [183.44, 183.64]

* y_true: [14.74077551 22.90183379]

* v_ann: [19.22722625732422, 19.346662521362305, 2

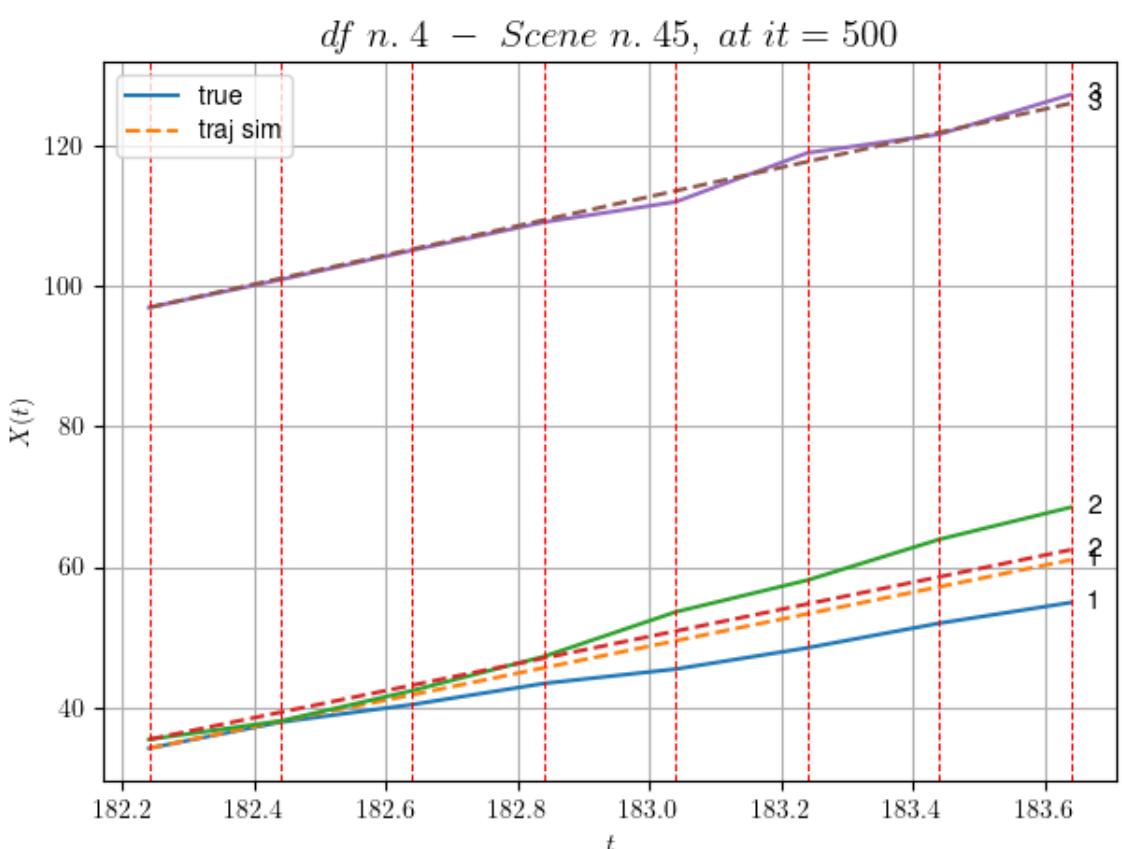
0.773199567272325]

* err= 8.436150043034951

* Learning rate NN = 2.541864660088322e-06

* diff = 0.014927873103765421

```



For scene 45/69

```
* use LR_NN=1e-05 with err=57.41483387571603 at it=24
* v0_scn_mean = 21.326807178972643
* MAE = 8.436150043034951
```

---



---

df n.4, scene n.46/69

---



---

```
We have 2 time intervals inside [193.04,193.44]
- Time interval n.0: [193.04, 193.24]
 * y_true: [26.28155868 27.90372348]
 * v_ann: [24.117151260375977, 24.67612075805664, 1
8.50652874846259]
```

---



---

```
- Time interval n.1: [193.24, 193.44]
 * y_true: [29.63205884 19.30286837]
 * v_ann: [27.657581329345703, 26.208972930908203, 1
8.50652874846259]
```

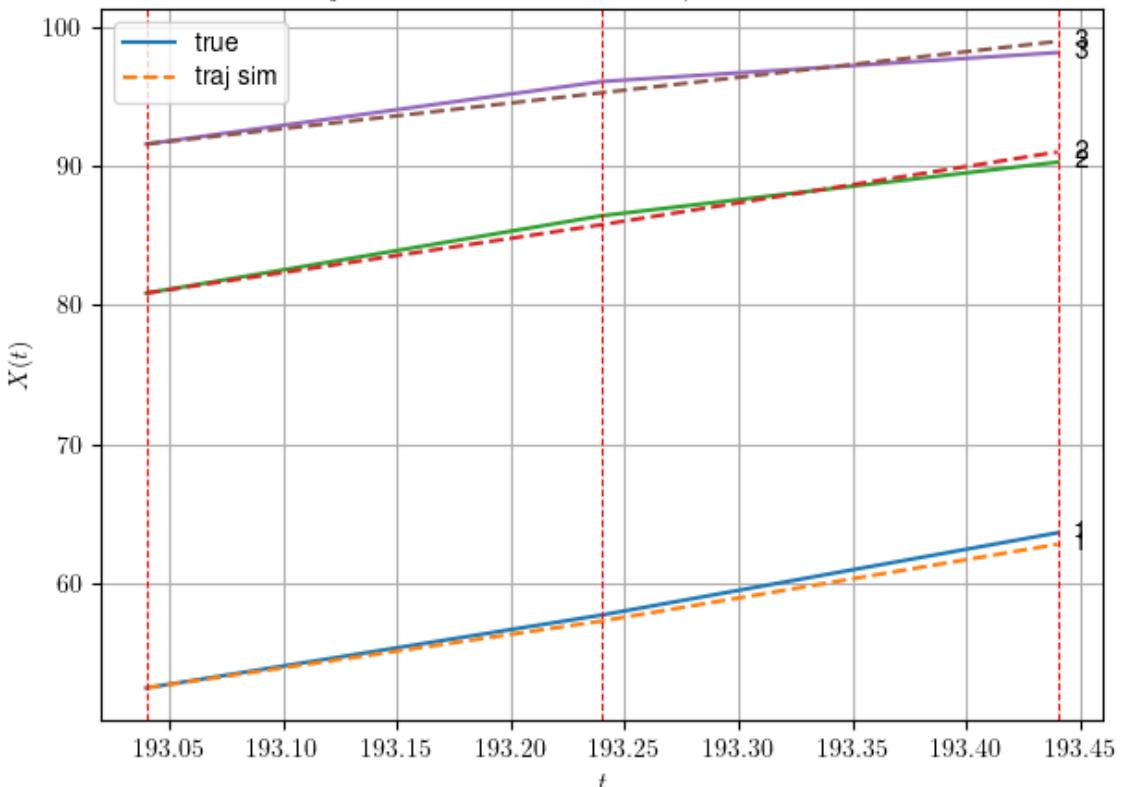
---



---

```
* err= 0.3482841025912607
* Learning rate NN = 0.00036449998151510954
* diff = 8.754267700053011e-05
```

*df n. 4 – Scene n. 46, at it = 500*



For scene 46/69

```
* use LR_NN=0.0005 with err=7.3575715572548175 at it=24
* v0_scn_mean = 19.19613650752282
* MAE = 0.33973726330140375
```

---



---



---

df n.4, scene n.47/69

---



---

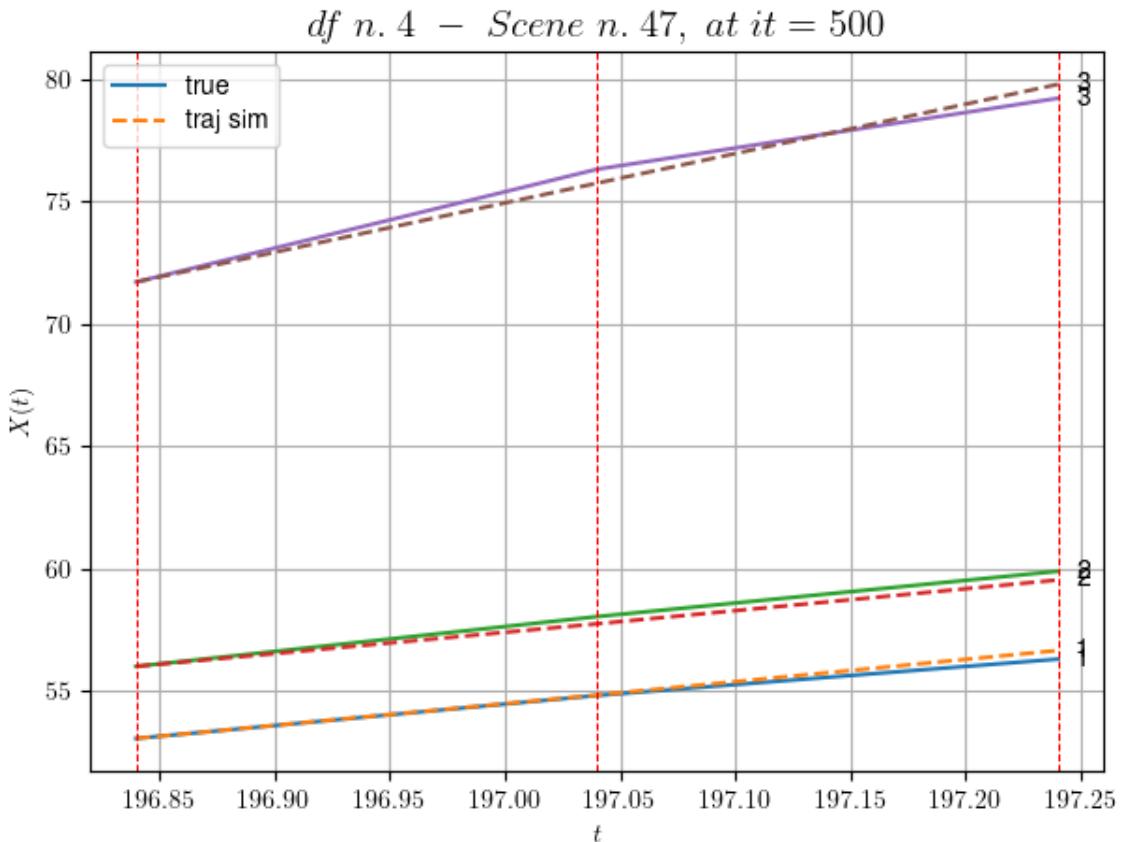
We have 2 time intervals inside [196.84,197.24]  
 - Time interval n.0: [196.84, 197.04]  
   \* y\_true: [ 8.77046468 10.16548364]  
   \* v\_ann: [8.869466781616211, 8.695427894592285, 20.  
 188773230043527]

---

- Time interval n.1: [197.04, 197.24]  
   \* y\_true: [7.43042623 9.26246532]  
   \* v\_ann: [9.104615211486816, 8.953566551208496, 20.  
 188773230043527]

---

\* err= 0.10956199412857996  
 \* Learning rate NN = 0.0007289999630302191  
 \* diff = 9.502742347414217e-06



For scene 47/69

\* use LR\_NN=0.001 with err=2.9729512258124715 at it=24  
 \* v0\_scn\_mean = 20.777446395737982  
 \* MAE = 0.10956199412857996

---



---

```
df n.4, scene n.48/69
```

```
=====
=====
```

We have 3 time intervals inside [222.84, 223.44]

- Time interval n.0: [222.84, 223.04]
  - \* y\_true: [19.28108097 23.47419597]
  - \* v\_ann: [17.75796127319336, 15.561063766479492, 3

```
0.107928662729964]
```

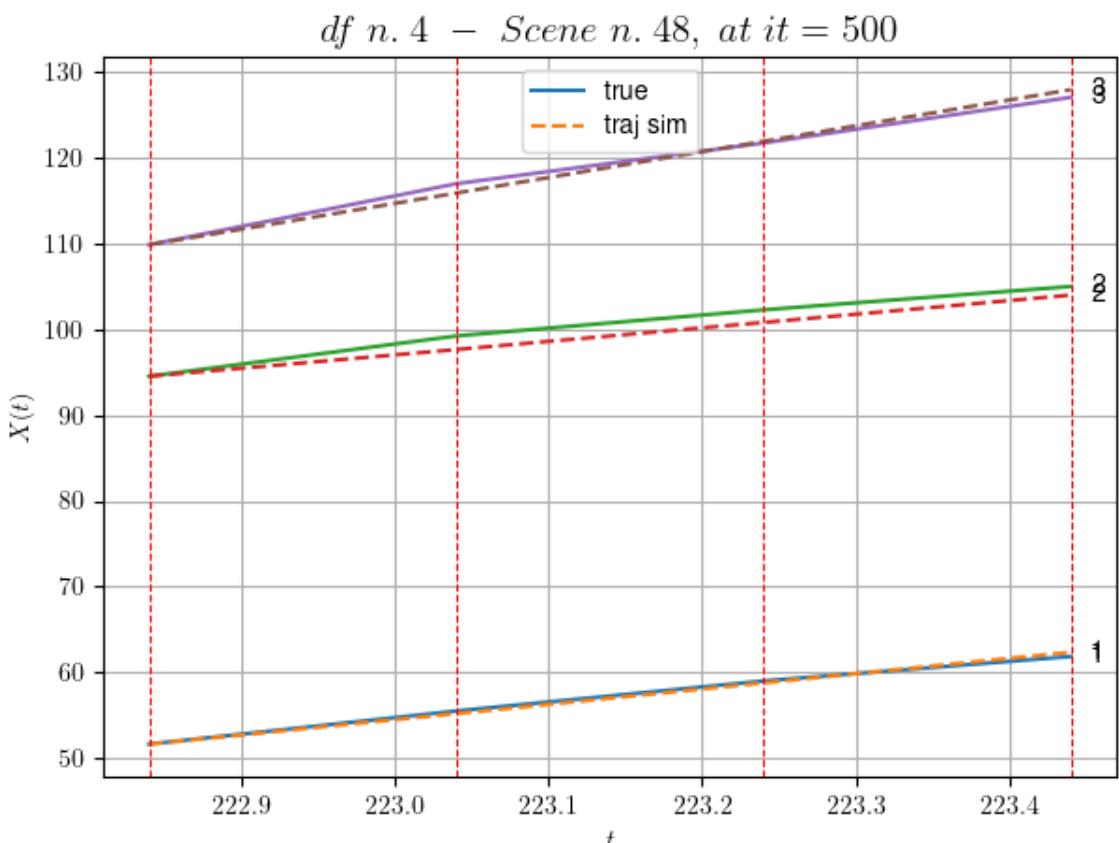
- 
- Time interval n.1: [223.04, 223.24]
  - \* y\_true: [17.49110618 15.20291758]
  - \* v\_ann: [17.898595809936523, 15.792613983154297, 3

```
0.107928662729964]
```

- 
- Time interval n.2: [223.24, 223.44]
  - \* y\_true: [14.25100604 13.59283886]
  - \* v\_ann: [17.84623146057129, 15.922989845275879, 3

```
0.107928662729964]
```

- 
- \* err= 0.6709996483135657  
 \* Learning rate NN = 5.9048988987342454e-06  
 \* diff = 0.022547422877680634



For scene 48/69

- \* use LR\_NN=1e-05 with err=5.40051712778667 at it=24
- \* v0\_scn\_mean = 30.10145294781202
- \* MAE = 0.6709996483135657

```
=====
=====
```

df n.4, scene n.49/69

```
=====
=====
```

We have 12 time intervals inside [224.84,227.24]

- Time interval n.0: [224.84, 225.04]
  - \* y\_true: [17.10046829 25.29311811]
  - \* v\_ann: [18.88724708557129, 19.551025390625, 15.71

3677130054691]

```

```

- Time interval n.1: [225.04, 225.24]

- \* y\_true: [17.70062553 10.9614656 ]
- \* v\_ann: [19.20770835876465, 19.71588897705078, 15.

713677130054691]

```

```

- Time interval n.2: [225.24, 225.44]

- \* y\_true: [22.57087879 26.33405568]
- \* v\_ann: [18.45977783203125, 19.50773811340332, 15.

713677130054691]

```

```

- Time interval n.3: [225.44, 225.64]

- \* y\_true: [16.35079439 22.81365517]
- \* v\_ann: [19.31851577758789, 19.75349235534668, 15.

713677130054691]

```

```

- Time interval n.4: [225.64, 225.84]

- \* y\_true: [20.8811317 16.55300892]
- \* v\_ann: [19.334735870361328, 19.754968643188477, 1

5.713677130054691]

```

```

- Time interval n.5: [225.84, 226.04]

- \* y\_true: [16.52103304 29.98602504]
- \* v\_ann: [19.236907958984375, 19.74312973022461, 1

5.713677130054691]

```

```

- Time interval n.6: [226.04, 226.24]

- \* y\_true: [18.95135857 18.46388585]
- \* v\_ann: [19.834230422973633, 18.45136070251465, 1

5.713677130054691]

```

```

- Time interval n.7: [226.24, 226.44]

- \* y\_true: [20.26160248 17.75418412]

```
* v_ann: [19.671842575073242, 19.857471466064453, 1
5.713677130054691]

- Time interval n.8: [226.44, 226.64]
* y_true: [16.68150299 14.60353303]
* v_ann: [19.561601638793945, 18.814184188842773, 1
5.713677130054691]

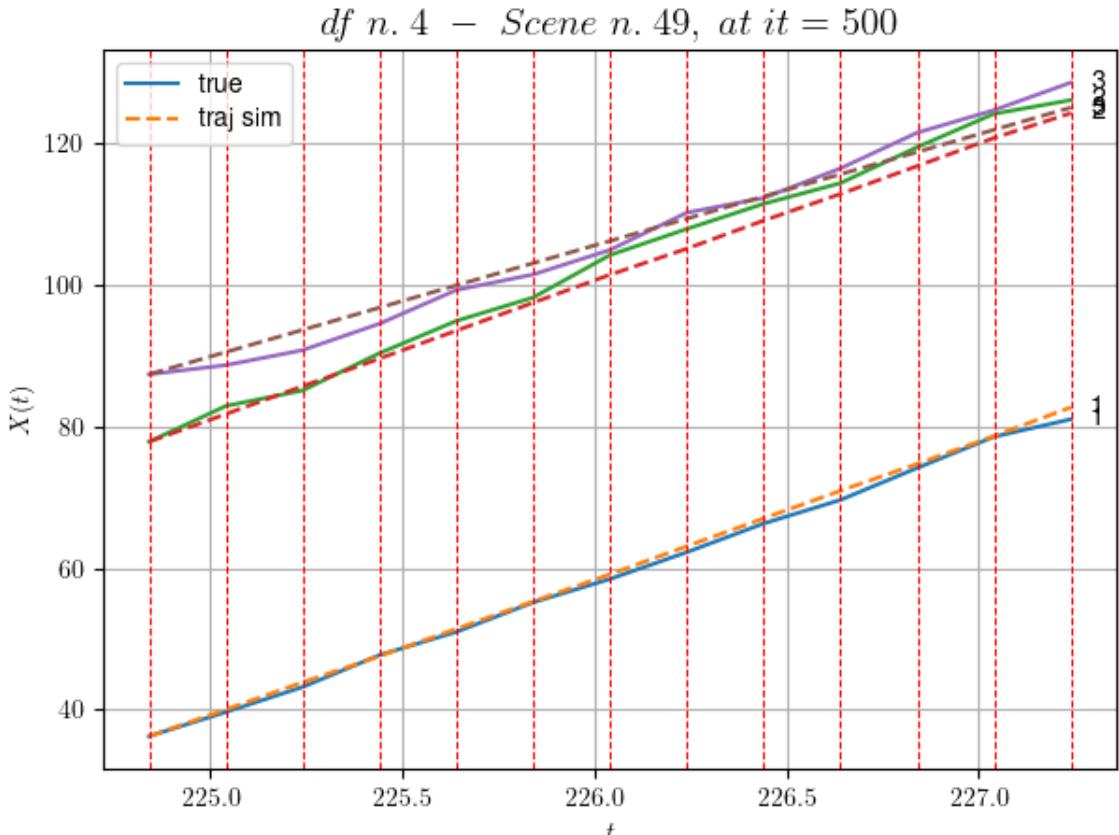
- Time interval n.9: [226.64, 226.84]
* y_true: [22.62228992 25.47686963]
* v_ann: [18.96314811706543, 19.726333618164062, 1
5.713677130054691]

- Time interval n.10: [226.84, 227.04]
* y_true: [22.04244959 23.58655245]
* v_ann: [19.750654220581055, 19.86829948425293, 1
5.713677130054691]

- Time interval n.11: [227.04, 227.24]
* y_true: [12.37151499 9.65291202]
* v_ann: [20.251609802246094, 17.494609832763672, 1
5.713677130054691]

* err= 2.774991567128804
* Learning rate NN = 4.431466732057743e-05

```



For scene 49/69

```
* use LR_NN=0.0005 with err=286.8537462902748 at it=24
* v0_scn_mean = 16.57085586082647
* MAE = 2.774991567128804
```

---



---

df n.4, scene n.50/69

---



---

We have 7 time intervals inside [230.84, 232.24]

- Time interval n.0: [230.84, 231.04]
  - \* y\_true: [ 5.64695095 17.97864337]
  - \* v\_ann: [11.713214874267578, 14.289225578308105, 2

3.322723002586617]

---

- Time interval n.1: [231.04, 231.24]
  - \* y\_true: [ 5.72513489 21.19066695]
  - \* v\_ann: [14.112998962402344, 13.47522258758545, 2

3.322723002586617]

---

- Time interval n.2: [231.24, 231.44]
  - \* y\_true: [ 6.01015392 28.29114422]
  - \* v\_ann: [13.996699333190918, 13.38601016998291, 2

3.322723002586617]

---

```

 - Time interval n.3: [231.44, 231.64]

 * y_true: [6.20016661 18.85086271]

 * v_ann: [14.711553573608398, 15.051294326782227, 2

3.322723002586617]

 - Time interval n.4: [231.64, 231.84]

 * y_true: [7.13021091 21.11121983]

 * v_ann: [14.122137069702148, 13.885756492614746, 2

3.322723002586617]

 - Time interval n.5: [231.84, 232.04]

 * y_true: [7.75024044 18.61116554]

 * v_ann: [14.140059471130371, 13.972530364990234, 2

3.322723002586617]

 - Time interval n.6: [232.04, 232.24]

 * y_true: [8.87530762 21.24160102]

 * v_ann: [13.85440444946289, 13.524491310119629, 2

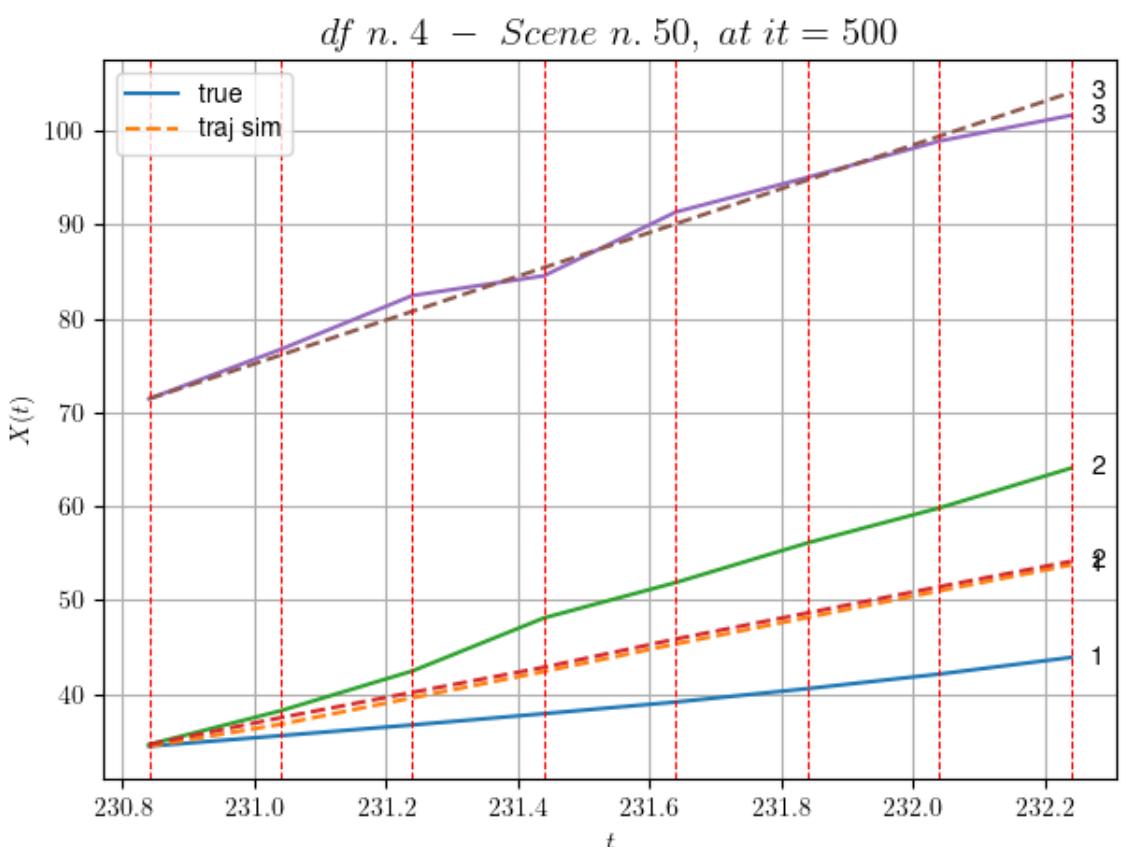
3.322723002586617]

* err= 25.345059746915876

* Learning rate NN = 0.00025418648147024214

* diff = 0.055797679573366565

```



For scene 50/69

```
* use LR_NN=0.001 with err=20.535463338345306 at it=24
* v0_scn_mean = 23.72335932263615
* MAE = 22.811192954519722
```

```
=====
```

```
df n.4, scene n.51/69
```

```
=====
```

```
=====
```

```
We have 7 time intervals inside [233.84,235.24]
```

```
- Time interval n.0: [233.84, 234.04]
 * y_true: [14.14101026 12.7012637]
 * v_ann: [21.199600219726562, 21.850492477416992, 2
```

```
1.462806471988266]
```

```

```

```

```

```
- Time interval n.1: [234.04, 234.24]
```

```
 * y_true: [26.43219185 20.11227439]
 * v_ann: [21.051530838012695, 21.686294555664062, 2
```

```
1.462806471988266]
```

```

```

```

```

```
- Time interval n.2: [234.24, 234.44]
```

```
 * y_true: [22.40209801 33.22429882]
 * v_ann: [21.03355598449707, 21.73977279663086, 21.
```

```
462806471988266]
```

```

```

```

```

```
- Time interval n.3: [234.44, 234.64]
```

```
 * y_true: [7.15071478 24.83361026]
 * v_ann: [21.22655487060547, 21.89510154724121, 21.
```

```
462806471988266]
```

```

```

```

```

```
- Time interval n.4: [234.64, 234.84]
```

```
 * y_true: [26.44301464 23.06377261]
 * v_ann: [21.26400375366211, 21.67600440979004, 21.
```

```
462806471988266]
```

```

```

```

```

```
- Time interval n.5: [234.84, 235.04]
```

```
 * y_true: [27.303494 31.34578132]
 * v_ann: [21.3048095703125, 21.70154571533203, 21.4
```

```
62806471988266]
```

```

```

```

```

```
- Time interval n.6: [235.04, 235.24]
```

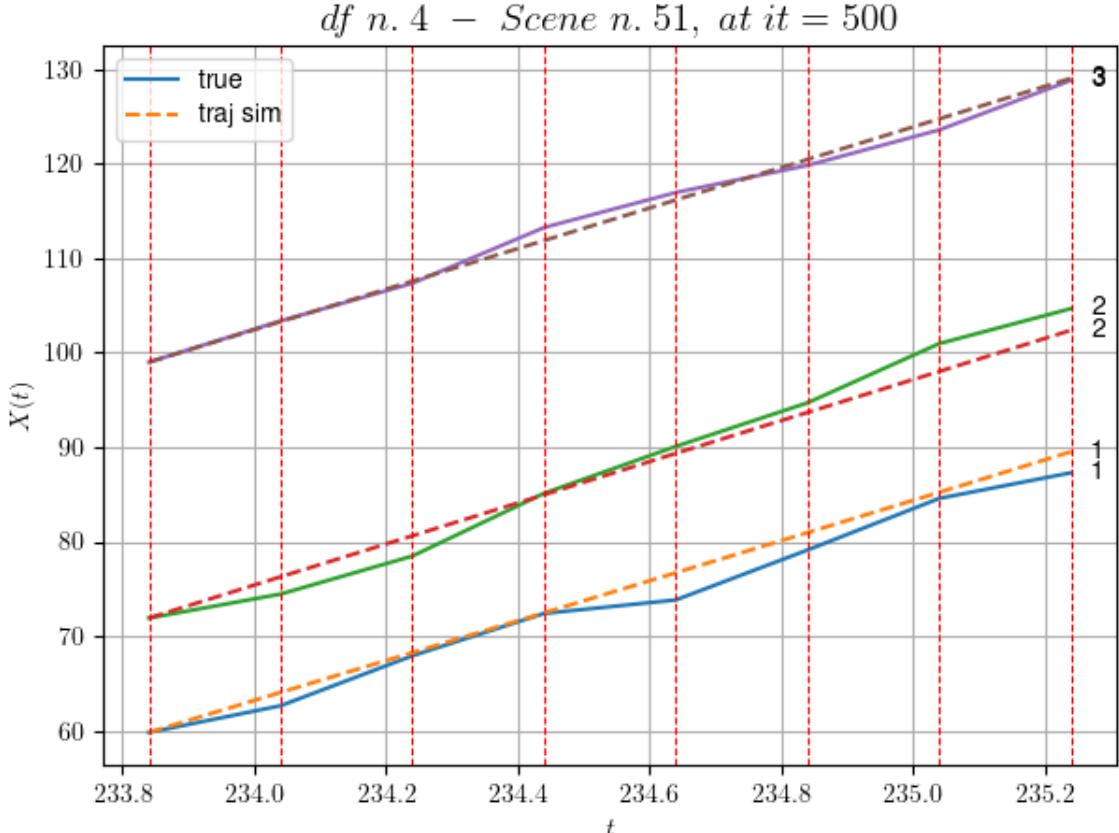
```
 * y_true: [13.58189317 18.51369375]
 * v_ann: [21.49900245666504, 21.7965087890625, 21.4
```

```
62806471988266]
```

```

```

```
* err= 1.9584205737659002
* Learning rate NN = 1.2709323527815286e-05
```



For scene 51/69

```
* use LR_NN=5e-05 with err=33.12475105466061 at it=24
* v0_scn_mean = 21.975037700367597
* MAE = 1.6001497130818478
```

df n.4, scene n.52/69

We have 2 time intervals inside [302.44, 302.84]

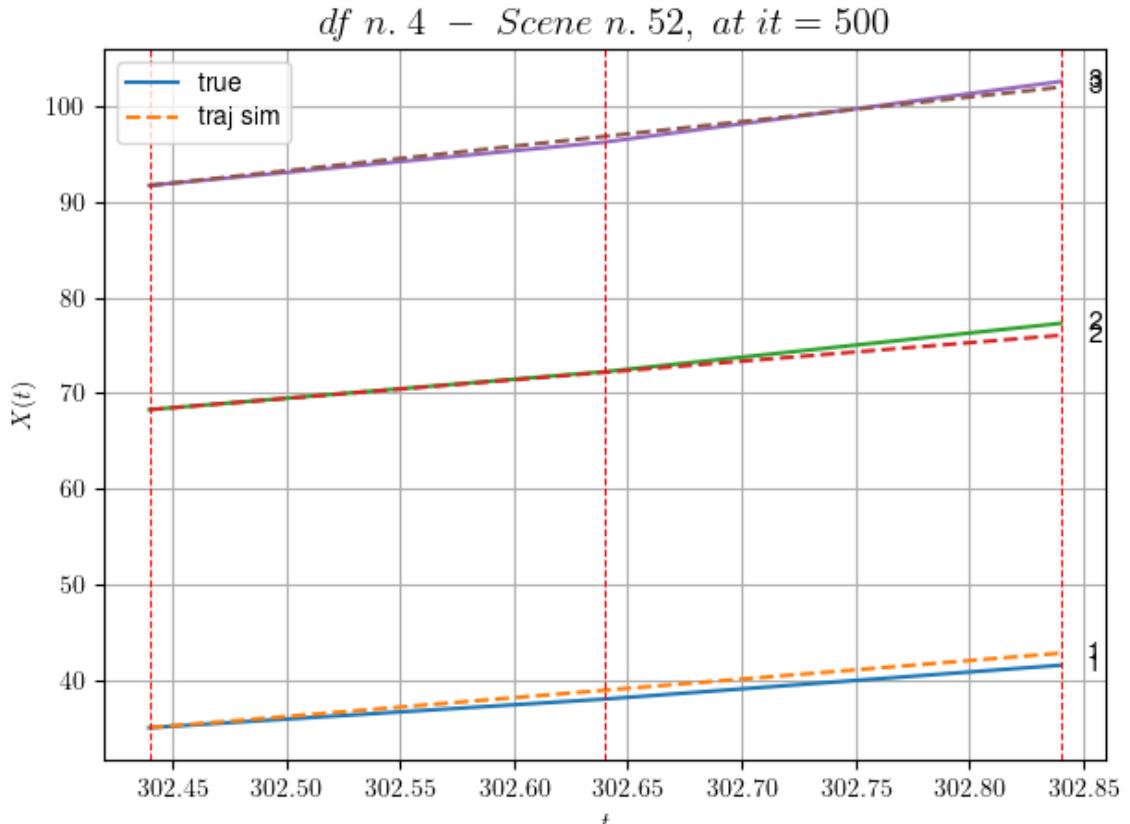
- Time interval n.0: [302.44, 302.64]
  - \* y\_true: [15.00036276 19.90190261]
  - \* v\_ann: [19.645742416381836, 19.561565399169922, 2

5.74453823302864]

- Time interval n.1: [302.64, 302.84]
  - \* y\_true: [17.72492583 25.30273749]
  - \* v\_ann: [19.4051513671875, 19.378398895263672, 25.

74453823302864]

```
* err= 0.5292633697540218
* Learning rate NN = 3.6449993785936385e-05
* diff = 0.002230221667796961
```



For scene 52/69

- \* use LR\_NN=5e-05 with err=2.1011474153074303 at it=24
- \* v0\_scn\_mean = 25.999865747986462
- \* MAE = 0.49190803850417514

---



---

df n.4, scene n.53/69

---



---

We have 4 time intervals inside [364.64, 365.44]

- Time interval n.0: [364.64, 364.84]
  - \* y\_true: [23.68175628 20.26218764]
  - \* v\_ann: [18.478559494018555, 19.115562438964844, 2

8.20572489389836]

---

- Time interval n.1: [364.84, 365.04]
  - \* y\_true: [20.38169455 13.81168669]
  - \* v\_ann: [18.77393341064453, 19.181495666503906, 2

8.20572489389836]

---

- Time interval n.2: [365.04, 365.24]
  - \* y\_true: [10.17092159 27.1635357 ]
  - \* v\_ann: [18.96541404724121, 18.267362594604492, 2

8.20572489389836]

---

```

- Time interval n.3: [365.24, 365.44]

* y_true: [18.57186597 15.36227914]

* v_ann: [18.248899459838867, 18.181804656982422, 2

8.20572489389836]

```

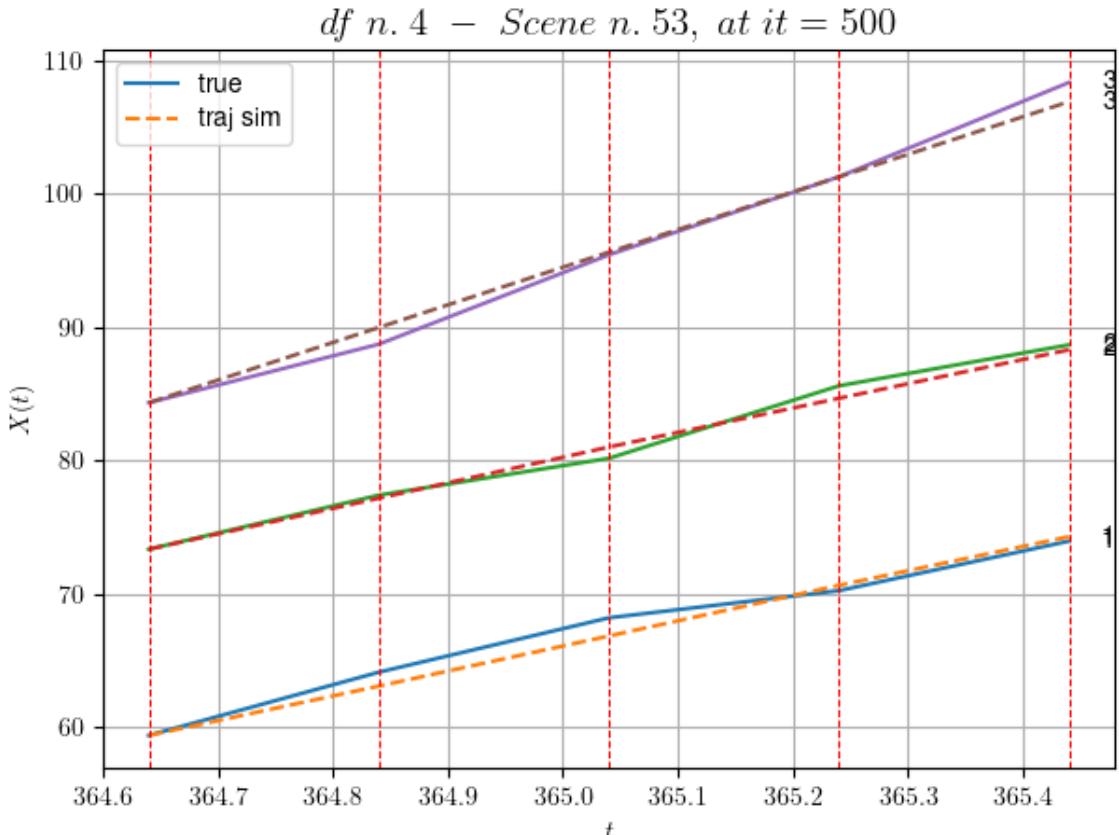
```

* err= 0.5776700646842827

* Learning rate NN = 4.7829678806010634e-05

* diff = 0.0002600765211525427

```



For scene 53/69

```

* use LR_NN=0.0001 with err=1.0085814992065185 at it=24
* v0 scn_mean = 28.313381319705673
* MAE = 0.5416320729120543
=====
```

```

df n.4, scene n.54/69
=====
```

```

===== We have 5 time intervals inside [422.64,423.64]
- Time interval n.0: [422.64, 422.84]
```

```

* y_true: [18.36052369 19.91162557]

* v_ann: [25.05038070678711, 24.336811065673828, 2

7.545089607776458]
=====
```

```

- Time interval n.1: [422.84, 423.04]

* y_true: [28.40107569 15.51150308]

* v_ann: [24.743200302124023, 24.180782318115234, 2

```

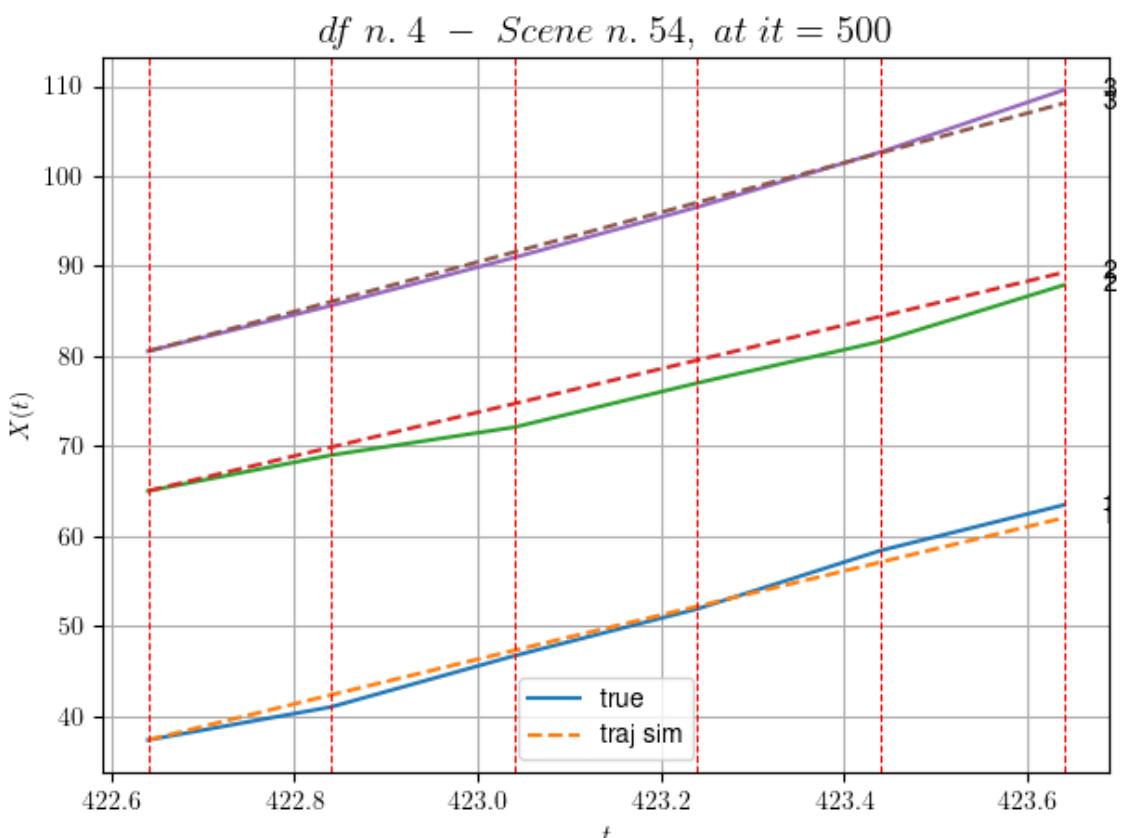
7.545089607776458]

- Time interval n.2: [423.04, 423.24]  
 \* y\_true: [26.09121176 24.58263804]  
 \* v\_ann: [24.476207733154297, 24.18075942993164, 2  
 7.545089607776458]

- Time interval n.3: [423.24, 423.44]  
 \* y\_true: [32.41191994 23.07275882]  
 \* v\_ann: [24.515605926513672, 24.255754470825195, 2  
 7.545089607776458]

- Time interval n.4: [423.44, 423.64]  
 \* y\_true: [25.31178577 31.31439465]  
 \* v\_ann: [24.598173141479492, 24.483823776245117, 2  
 7.545089607776458]

\* err= 1.8219241538839936  
 \* Learning rate NN = 1.9371018424862996e-05  
 \* diff = 0.00047976175922403996



For scene 54/69

\* use LR\_NN=5e-05 with err=2.99475186056037 at it=24  
 \* v0\_scn\_mean = 27.692384121089837  
 \* MAE = 1.798332733740364

```
=====
=====
```

df n.4, scene n.55/69

```
=====
=====
```

We have 2 time intervals inside [440.44, 440.84]

- Time interval n.0: [440.44, 440.64]

- \* y\_true: [23.50209477 27.05306951]

- \* v\_ann: [19.743114471435547, 19.659189224243164, 2  
1.126994497572166]

```
=====
=====
```

- Time interval n.1: [440.64, 440.84]

- \* y\_true: [ 8.15079495 24.70319187]

- \* v\_ann: [21.488651275634766, 22.03400421142578, 2  
1.126994497572166]

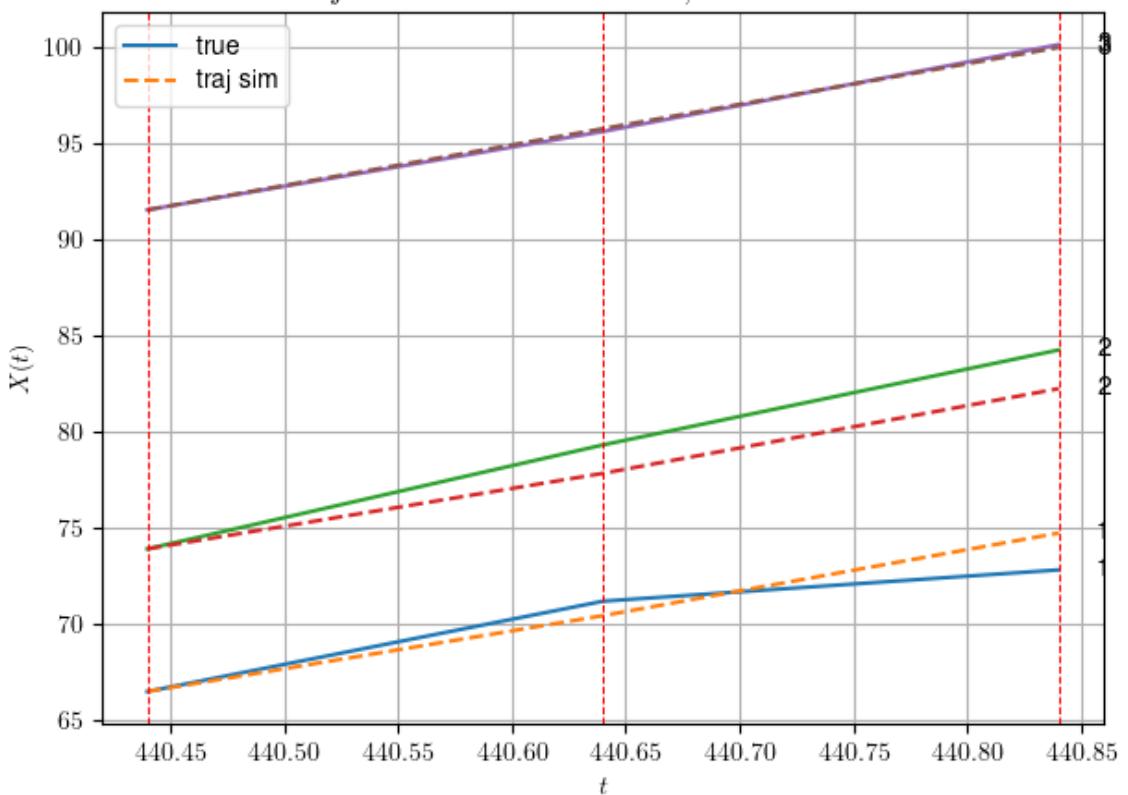
```
=====
=====
```

- \* err= 1.1686902263161014

- \* Learning rate NN = 0.00036449998151510954

- \* diff = 0.00013664213255393243

*df n. 4 – Scene n. 55, at it = 500*



For scene 55/69

- \* use LR\_NN=0.0005 with err=2.8338735062022806 at it=24

- \* v0\_scn\_mean = 21.659374429339675

- \* MAE = 1.1590472144614803

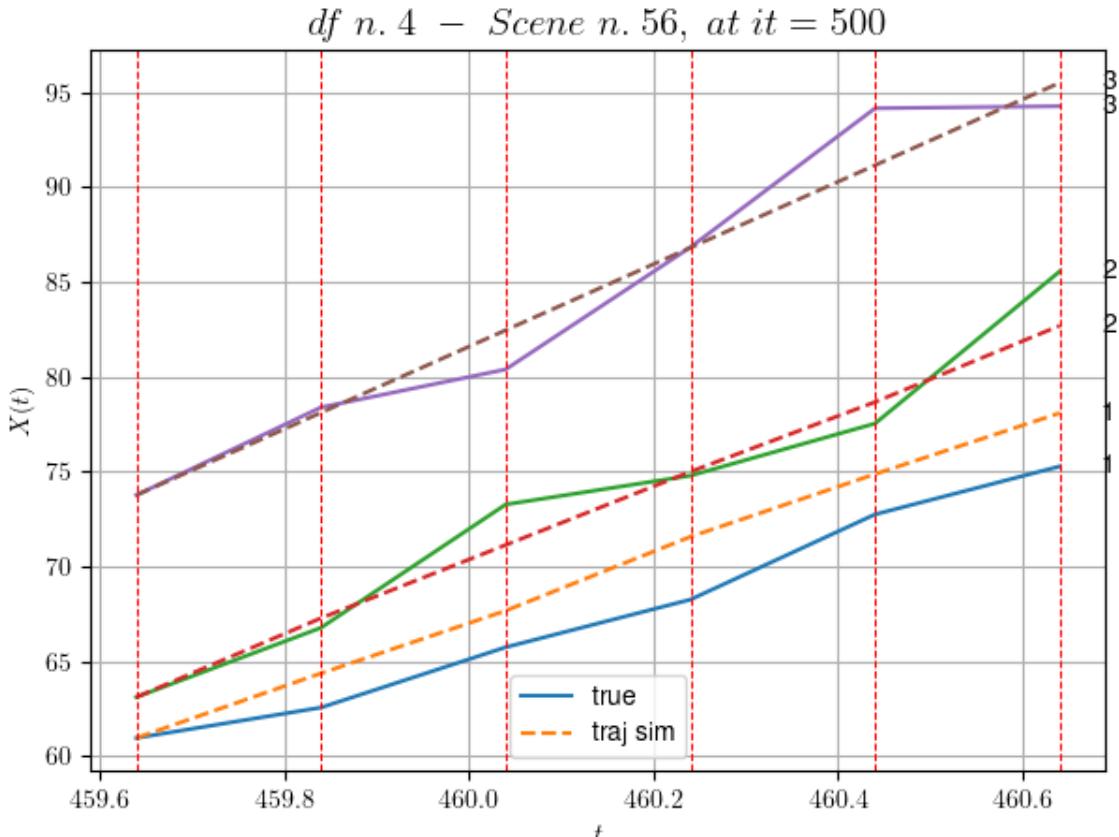
```
=====
=====
```

```
df n.4, scene n.56/69
```

```
=====
=====
```

We have 5 time intervals inside [459.64, 460.64]

- Time interval n.0: [459.64, 459.84]
  - \* y\_true: [ 8.02057991 18.30147717]
  - \* v\_ann: [17.043424606323242, 20.835124969482422, 21.74947760522781]
- 
- Time interval n.1: [459.84, 460.04]
  - \* y\_true: [15.90126261 32.50305135]
  - \* v\_ann: [16.520275115966797, 19.2978458404541, 21.74947760522781]
- 
- Time interval n.2: [460.04, 460.24]
  - \* y\_true: [12.56106954 7.60079575]
  - \* v\_ann: [19.48831558227539, 19.30826187133789, 21.74947760522781]
- 
- Time interval n.3: [460.24, 460.44]
  - \* y\_true: [22.47215871 13.7515264 ]
  - \* v\_ann: [16.528169631958008, 18.379343032836914, 21.74947760522781]
- 
- Time interval n.4: [460.44, 460.64]
  - \* y\_true: [12.66130245 40.10510628]
  - \* v\_ann: [16.08843994140625, 20.130489349365234, 21.74947760522781]
- 
- \* err= 3.3116481246616303
- \* Learning rate NN = 0.0003874204121530056
- \* diff = 0.062434742627087925



For scene 56/69

```
* use LR_NN=0.001 with err=10.793248405852802 at it=24
* v0_scn_mean = 22.24450857848327
* MAE = 3.3116481246616303
```

---



---

df n.4, scene n.57/69

---



---

We have 10 time intervals inside [493.84, 495.84]

- Time interval n.0: [493.84, 494.04]
  - \* y\_true: [22.94003108 21.75102788]
  - \* v\_ann: [22.74115753173828, 23.075639724731445, 2

0.436941639155368]

---

- Time interval n.1: [494.04, 494.24]
  - \* y\_true: [17.14085991 24.35137427]
  - \* v\_ann: [22.695417404174805, 23.01205062866211, 2

0.436941639155368]

---

- Time interval n.2: [494.24, 494.44]
  - \* y\_true: [21.88131212 25.00167951]
  - \* v\_ann: [22.576873779296875, 22.7235107421875, 20.

436941639155368]

---

```

 - Time interval n.3: [494.44, 494.64]
 * y_true: [18.45125037 31.00249487]
 * v_ann: [22.645931243896484, 22.81992530822754, 2
0.436941639155368]

 - Time interval n.4: [494.64, 494.84]
 * y_true: [23.98189292 7.35066295]
 * v_ann: [22.881895065307617, 22.91166114807129, 2
0.436941639155368]

 - Time interval n.5: [494.84, 495.04]
 * y_true: [24.94226236 24.20238954]
 * v_ann: [22.262250900268555, 22.242233276367188, 2
0.436941639155368]

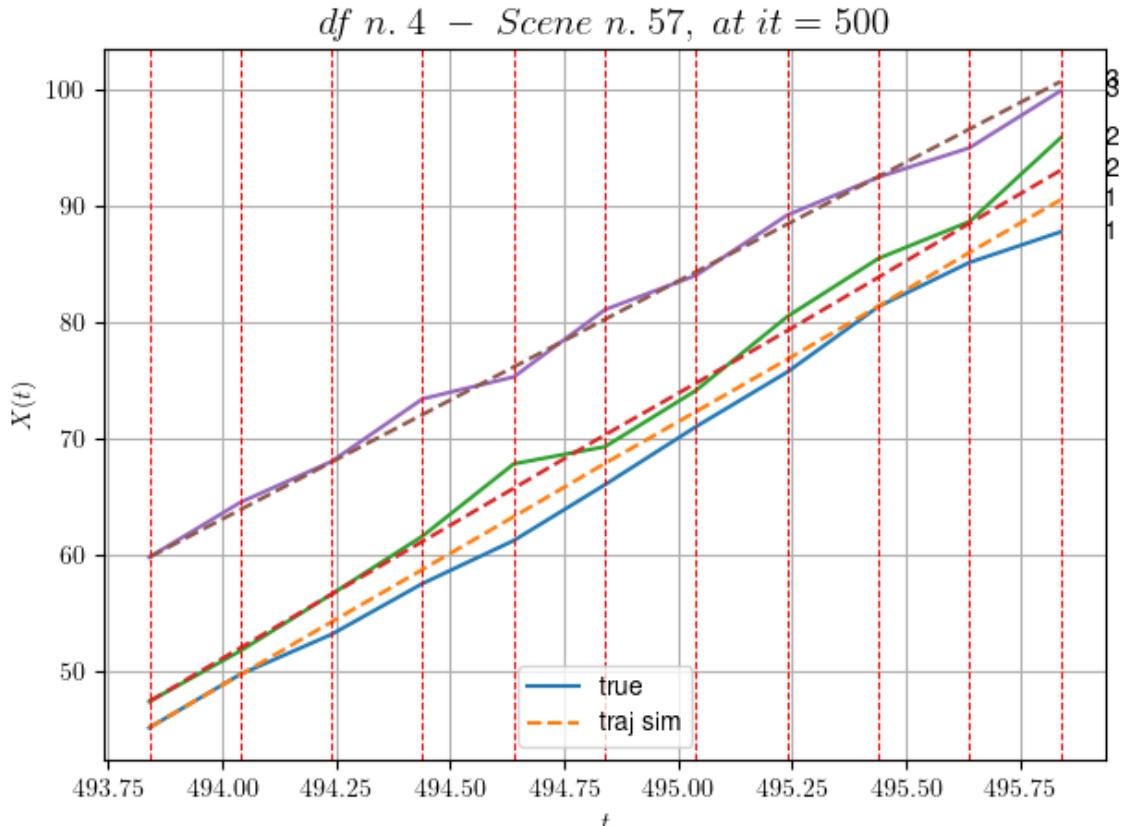
 - Time interval n.6: [495.04, 495.24]
 * y_true: [23.43243252 31.70363737]
 * v_ann: [22.425891876220703, 22.488677978515625, 2
0.436941639155368]

 - Time interval n.7: [495.24, 495.44]
 * y_true: [28.10335872 24.95329593]
 * v_ann: [22.82586097717285, 22.955644607543945, 2
0.436941639155368]

 - Time interval n.8: [495.44, 495.64]
 * y_true: [18.99250639 15.85230368]
 * v_ann: [23.07782554626465, 23.220170974731445, 2
0.436941639155368]

 - Time interval n.9: [495.64, 495.84]
 * y_true: [13.12188353 36.00587838]
 * v_ann: [22.651947021484375, 22.726125717163086, 2
0.436941639155368]

* err= 1.4238241559829143
* Learning rate NN = 0.00013508510892279446
* diff = 0.0028706749323832437
```



For scene 57/69

\* use LR\_NN=0.001 with err=75.9593453218921 at it=24  
 \* v0\_scn\_mean = 21.01072471144567  
 \* MAE = 1.3766553124585448

---



---

df n.4, scene n.58/69

---



---

We have 8 time intervals inside [520.04, 521.64]

- Time interval n.0: [520.04, 520.24]  
 \* y\_true: [17.72000935 17.53021327]  
 \* v\_ann: [21.078861236572266, 20.904993057250977, 2  
 5.962807327177586]

---

- Time interval n.1: [520.24, 520.44]  
 \* y\_true: [21.19003079 20.68032877]  
 \* v\_ann: [21.057437896728516, 20.840919494628906, 2  
 5.962807327177586]

---

- Time interval n.2: [520.44, 520.64]  
 \* y\_true: [20.95006602 20.21041565]  
 \* v\_ann: [21.05854606628418, 20.841947555541992, 2  
 5.962807327177586]

---

```

 - Time interval n.3: [520.64, 520.84]
 * y_true: [19.83010584 22.72061589]
 * v_ann: [21.057722091674805, 20.815780639648438, 2
5.962807327177586]

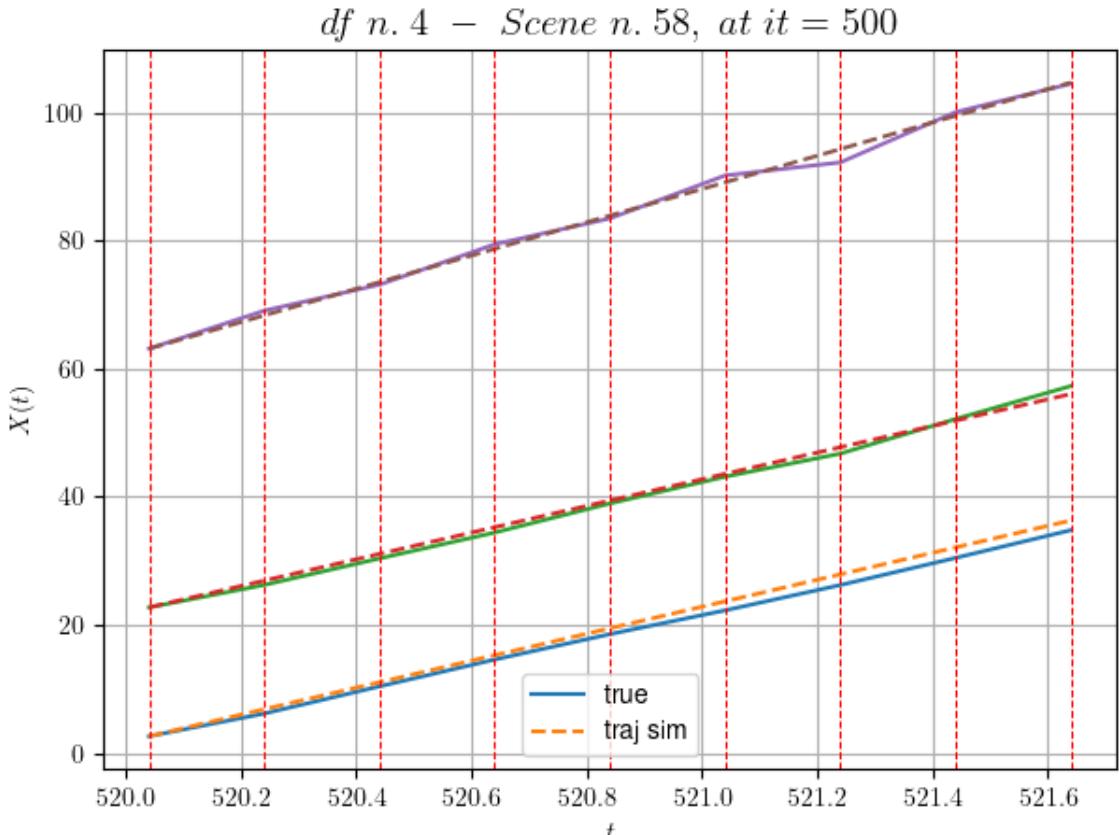
 - Time interval n.4: [520.84, 521.04]
 * y_true: [18.57015207 20.87066157]
 * v_ann: [21.05483627319336, 20.82611083984375, 25.
962807327177586]

 - Time interval n.5: [521.04, 521.24]
 * y_true: [19.76022757 18.03074501]
 * v_ann: [21.04200553894043, 20.78428077697754, 25.
962807327177586]

 - Time interval n.6: [521.24, 521.44]
 * y_true: [21.18033214 27.03127071]
 * v_ann: [21.030925750732422, 20.769609451293945, 2
5.962807327177586]

 - Time interval n.7: [521.44, 521.64]
 * y_true: [21.65044512 25.69152055]
 * v_ann: [21.0430965423584, 20.7947940826416, 25.96
2807327177586]

* err= 0.8800809941291773
* Learning rate NN = 2.058910467894748e-06
* diff = 0.01015150161973751
```



For scene 58/69

```
* use LR_NN=1e-05 with err=29.727642197887842 at it=24
* v0_scn_mean = 26.205038706285507
* MAE = 0.8800809941291773
```

---



---

df n.4, scene n.59/69

---



---

We have 4 time intervals inside [550.44, 551.24]

- Time interval n.0: [550.44, 550.64]
  - \* y\_true: [23.95217582 22.66294351]
  - \* v\_ann: [23.660778045654297, 23.45561981201172, 2

0.148397636538533]

---

- Time interval n.1: [550.64, 550.84]
  - \* y\_true: [22.2022957 28.49416646]
  - \* v\_ann: [23.577224731445312, 23.4044189453125, 20.

148397636538533]

---

- Time interval n.2: [550.84, 551.04]
  - \* y\_true: [19.80228834 20.61332089]
  - \* v\_ann: [24.15802764892578, 23.600833892822266, 2

0.148397636538533]

---

```

- Time interval n.3: [551.04, 551.24]

* y_true: [31.50413614 18.88333685]

* v_ann: [23.119895935058594, 23.0207462310791, 20.

148397636538533]

```

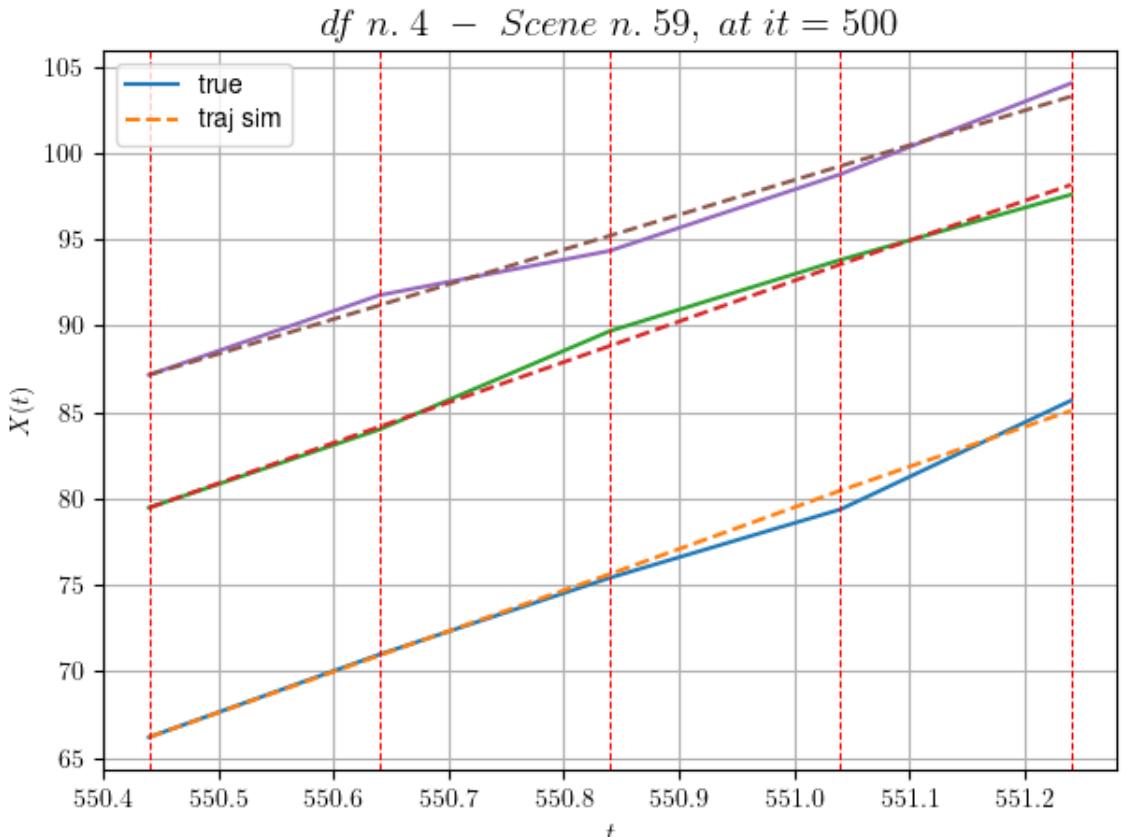
```

* err= 0.3092305937823377

* Learning rate NN = 0.000239148415857926

* diff = 3.877150135278562e-06

```



For scene 59/69

```

* use LR_NN=0.0005 with err=16.205826766615004 at it=24
* v0_scn_mean = 20.739493336030066
* MAE = 0.3092158707888243
=====
```

df n.4, scene n.60/69

```

=====
```

```

We have 2 time intervals inside [554.64,555.04]
- Time interval n.0: [554.64, 554.84]
* y_true: [16.3871362 34.43556815]
* v_ann: [23.134057998657227, 22.573244094848633, 2
0.440727818766494]
=====
```

```

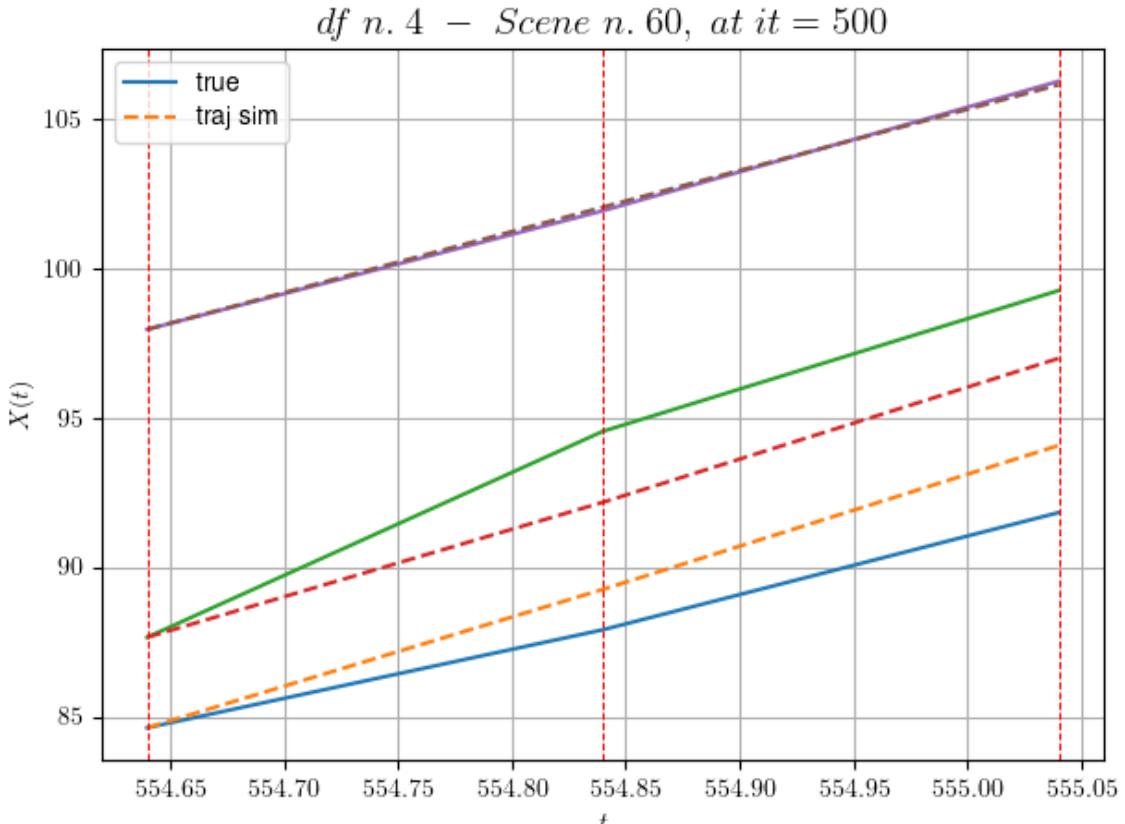
- Time interval n.1: [554.84, 555.04]
* y_true: [19.58824641 23.53414882]

```

```
* v_ann: [24.06272315979004, 24.060083389282227, 2
0.440727818766494]
```

---

```
* err= 1.9618038138794607
* Learning rate NN = 0.0007289999630302191
* diff = 4 145258673227126e-05
```



For scene 60/69

```
* use LR_NN=0.001 with err=2.4210809457607128 at it=24
* v0_scn_mean = 21.01428372044814
* MAE = 1.9555155520240028
```

---



---

df n.4, scene n.61/69

---



---

We have 2 time intervals inside [556.24, 556.64]

- Time interval n.0: [556.24, 556.44]
  - \* y\_true: [24.75252122 21.70224237]
  - \* v\_ann: [23.966320037841797, 24.514854431152344, 1
 5.086092436632724]

---



---

- Time interval n.1: [556.44, 556.64]
  - \* y\_true: [25.4427559 22.85265518]
  - \* v\_ann: [23.472272872924805, 22.707603454589844, 1
 5.086092436632724]

---

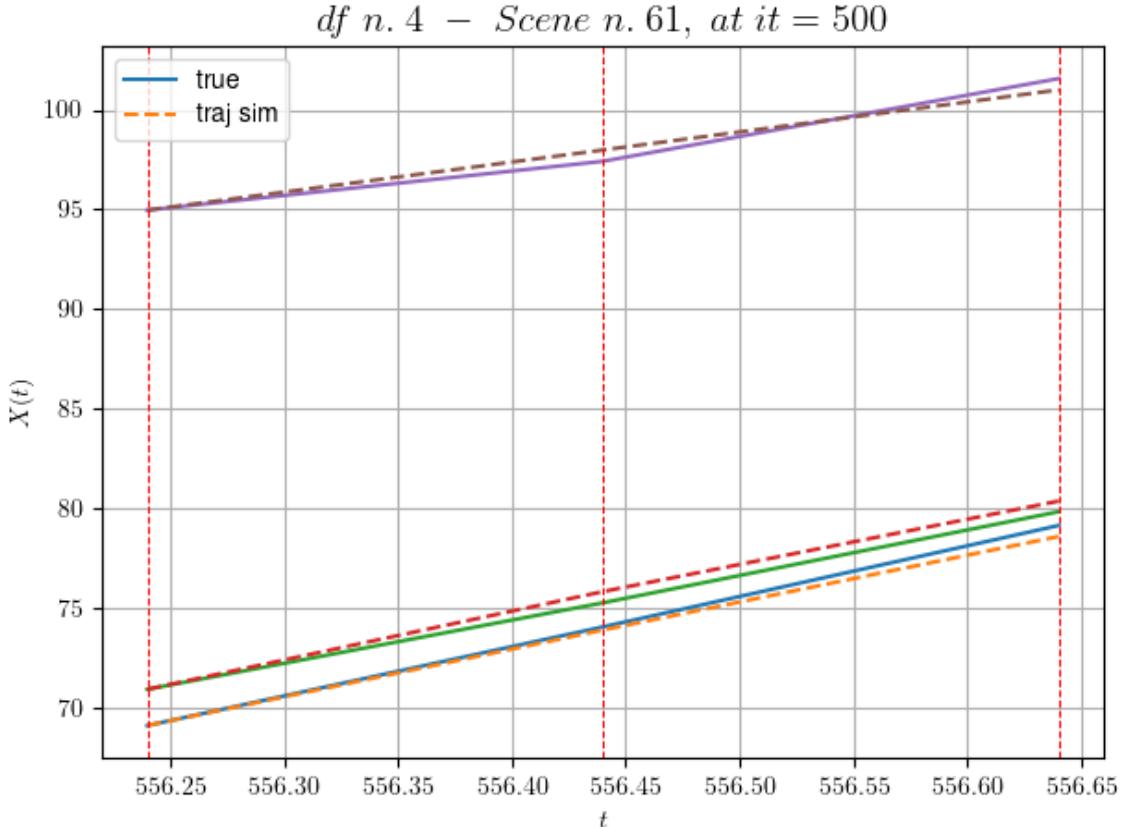


---

```

* err= 0.17469470087691852
* Learning rate NN = 0.0007289999630302191
* diff = 1.8555245450607716e-05

```



For scene 61/69

```

* use LR_NN=0.001 with err=14.725262184373387 at it=24
* v0 scn mean = 15.980926220832517
* MAE = 0.17469470087691852

```

---



---

df n.4, scene n.62/69

---



---

We have 4 time intervals inside [575.04, 575.84]

- Time interval n.0: [575.04, 575.24]
  - \* y\_true: [25.50060057 18.90068968]
  - \* v\_ann: [22.17481231689453, 22.047080993652344, 24.545621507400494]

---

- Time interval n.1: [575.24, 575.44]
  - \* y\_true: [27.95087423 28.65128625]
  - \* v\_ann: [22.188915252685547, 22.109312057495117, 24.545621507400494]

---



---

- Time interval n.2: [575.44, 575.64]
  - \* y\_true: [21.25083564 15.85084753]

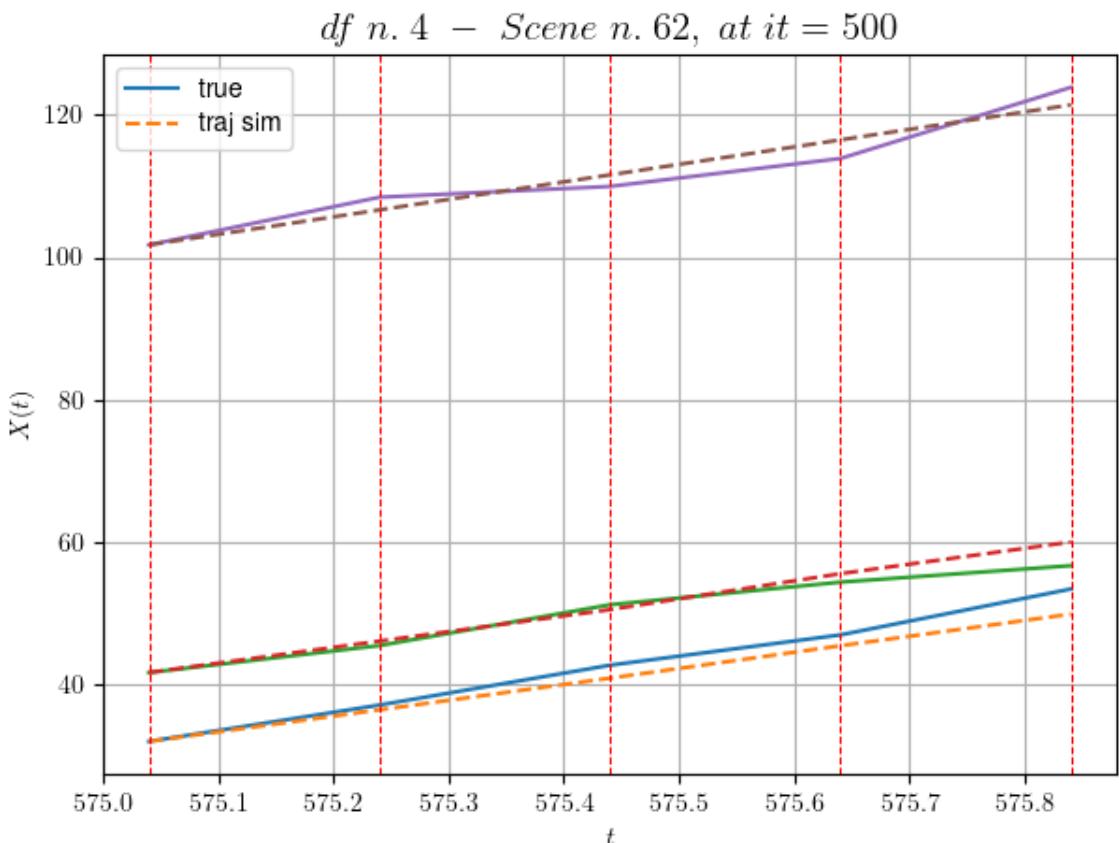
```

* v_ann: [22.739553451538086, 25.20032501220703, 2
4.545621507400494]

- Time interval n.3: [575.64, 575.84]
* y_true: [32.20158375 11.5506833]
* v_ann: [22.20592498779297, 22.203340530395508, 2
4.545621507400494]

* err= 3.358259189429789
* Learning rate NN = 4.7829678806010634e-05
* diff = 0.0202221257170554022

```



For scene 62/69

```

* use LR_NN=0.0001 with err=44.87099168844065 at it=24
* v0_scn_mean = 24.872883972067243
* MAE = 3.358259189429789
=====
```

df n.4, scene n.63/69

```
=====
=====
```

```

We have 3 time intervals inside [313.84,314.44]
- Time interval n.0: [313.84, 314.04]
* y_true: [15.70108851 23.28855659 11.30165534]
* v_ann: [24.16946029663086, 28.427209854125977, 2
9.63140869140625, 26.415529524803954]
```

```

 - Time interval n.1: [314.04, 314.24]

 * y_true: [25.15198981 24.43240479 30.10483754]

 * v_ann: [20.886722564697266, 20.63859748840332, 2

0.441064834594727, 26.415529524803954]

 - Time interval n.2: [314.24, 314.44]

 * y_true: [27.30252596 23.75264682 40.35752125]

 * v_ann: [22.53931999206543, 24.056676864624023, 2

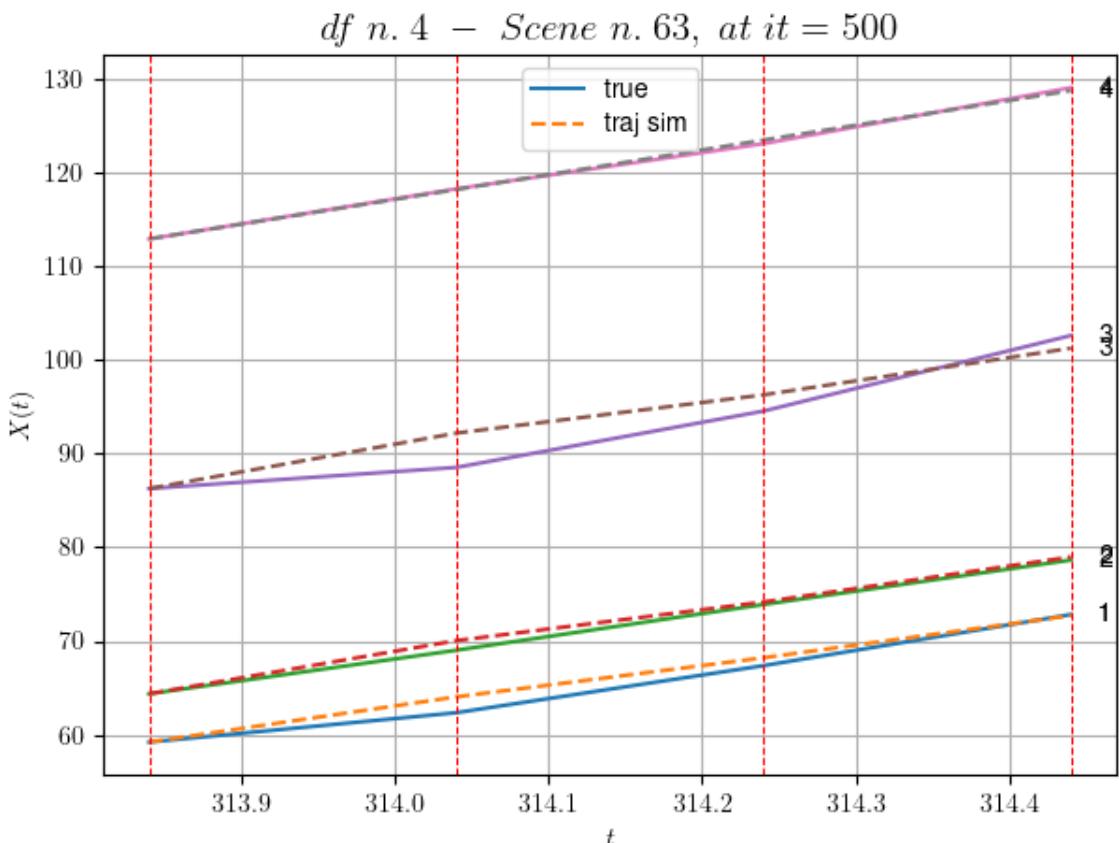
4.90486717224121, 26.415529524803954]

* err= 1.4605085818803265

* Learning rate NN = 0.0002952449722215533

* diff = 0.0013875659298925314

```



For scene 63/69

```

* use LR_NN=0.0005 with err=10.713355887725182 at it=24
* v0_scn_mean = 26.702275498478805
* MAE = 1.4073970514239513

```

---

---

---

df n.4, scene n.64/69

---

---

---

```

=====

We have 2 time intervals inside [460.84,461.24]

- Time interval n.0: [460.84, 461.04]

 * y_true: [19.8211655 14.23151831 20.23251805]

```

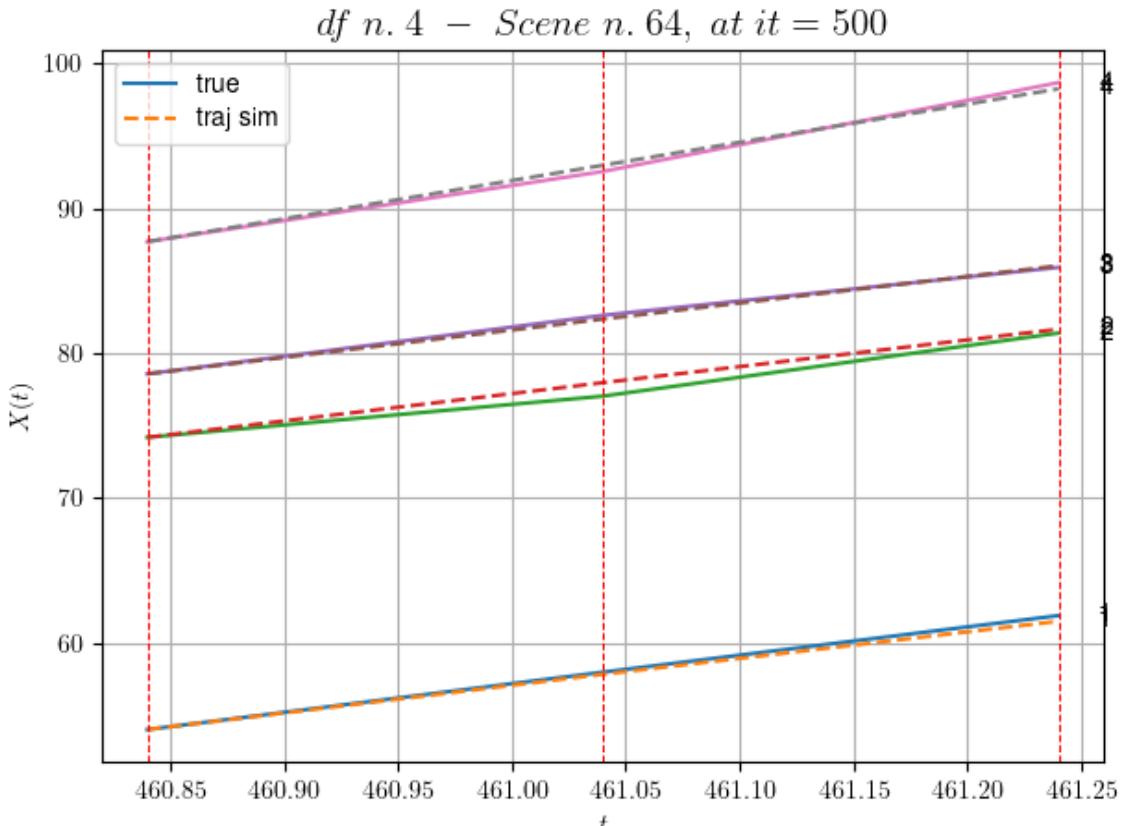
```
* v_ann: [19.076406478881836, 18.882007598876953, 1
8.93776512145996, 26.404314529227786]
```

---

```
- Time interval n.1: [461.04, 461.24]
* y_true: [19.5413591 21.77263281 16.55223683]
* v_ann: [18.33228302001953, 18.46450424194336, 18.
421031951904297, 26.404314529227786]
```

---

```
* err= 0.1301885420160722
* Learning rate NN = 0.0007289999630302191
* diff = 2.8019431663750538e-08
```



For scene 64/69

```
* use LR_NN=0.001 with err=2.574748774143687 at it=24
* v0_scn_mean = 26.691957666053582
* MAE = 0.12908305501695644
```

---



---



---

df n.4, scene n.65/69

---



---



---

We have 2 time intervals inside [462.64, 463.04]

```
- Time interval n.0: [462.64, 462.84]
* y_true: [21.60177307 15.7113741 22.90372044]
* v_ann: [19.194425582885742, 18.393497467041016, 1
9.147296905517578, 31.352447205664888]
```

```

- Time interval n.1: [462.84, 463.04]

 * y_true: [18.06167929 17.53172974 18.9633766]

 * v_ann: [18.73647689819336, 19.593576431274414, 1

 9.628461837768555, 31.352447205664888]

```

```

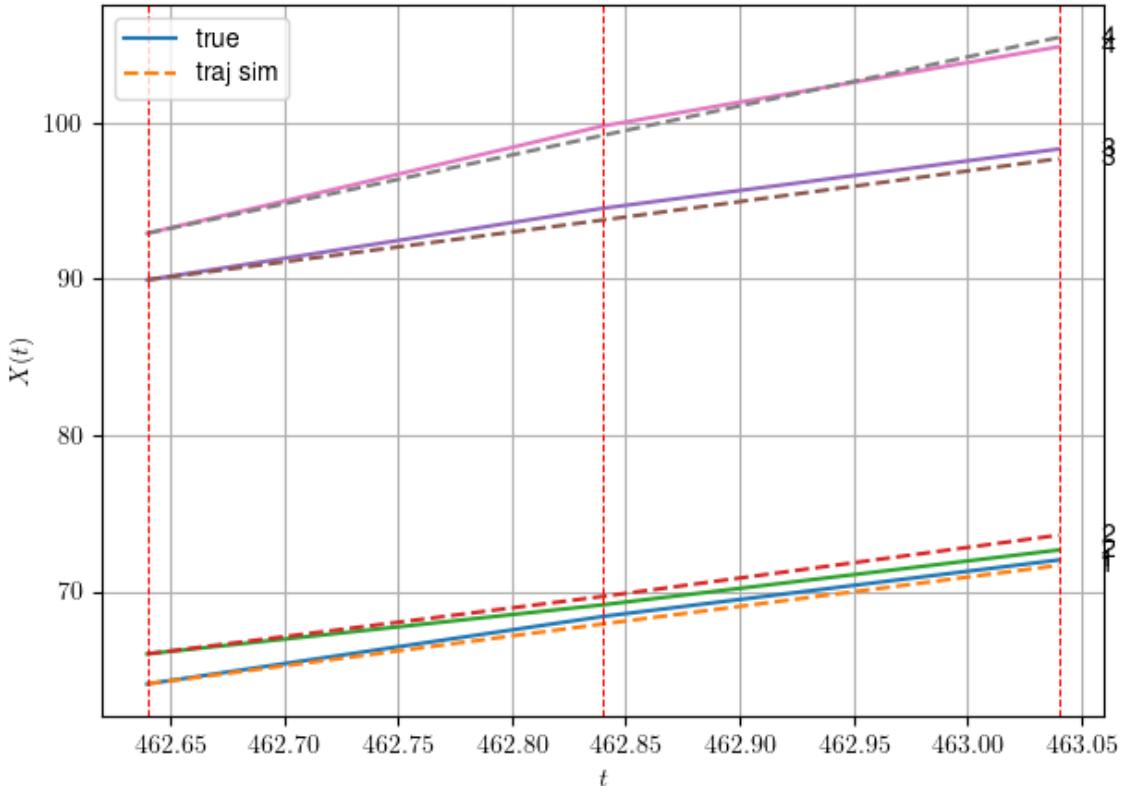
* err= 0.2673607066677366

* Learning rate NN = 0.0007289999630302191

* diff = 0 00038619883821783274

```

*df n. 4 – Scene n. 65, at it = 500*



For scene 65/69

```

* use LR_NN=0.001 with err=9.203598624442083 at it=24

* v0_scn_mean = 31.24425583025306

* MAE = 0.2636716171862792

```

=====

=====

df n.4, scene n.66/69

=====

=====

We have 3 time intervals inside [495.24, 495.84]

```

- Time interval n.0: [495.24, 495.44]

 * y_true: [12.91123632 28.10335872 24.95329593]

 * v_ann: [21.955835342407227, 21.901386260986328, 2

 2.265945434570312, 16.437805482235774]

```

```

- Time interval n.1: [495.44, 495.64]

 * y_true: [9.32105302 18.99250639 15.85230368]

```

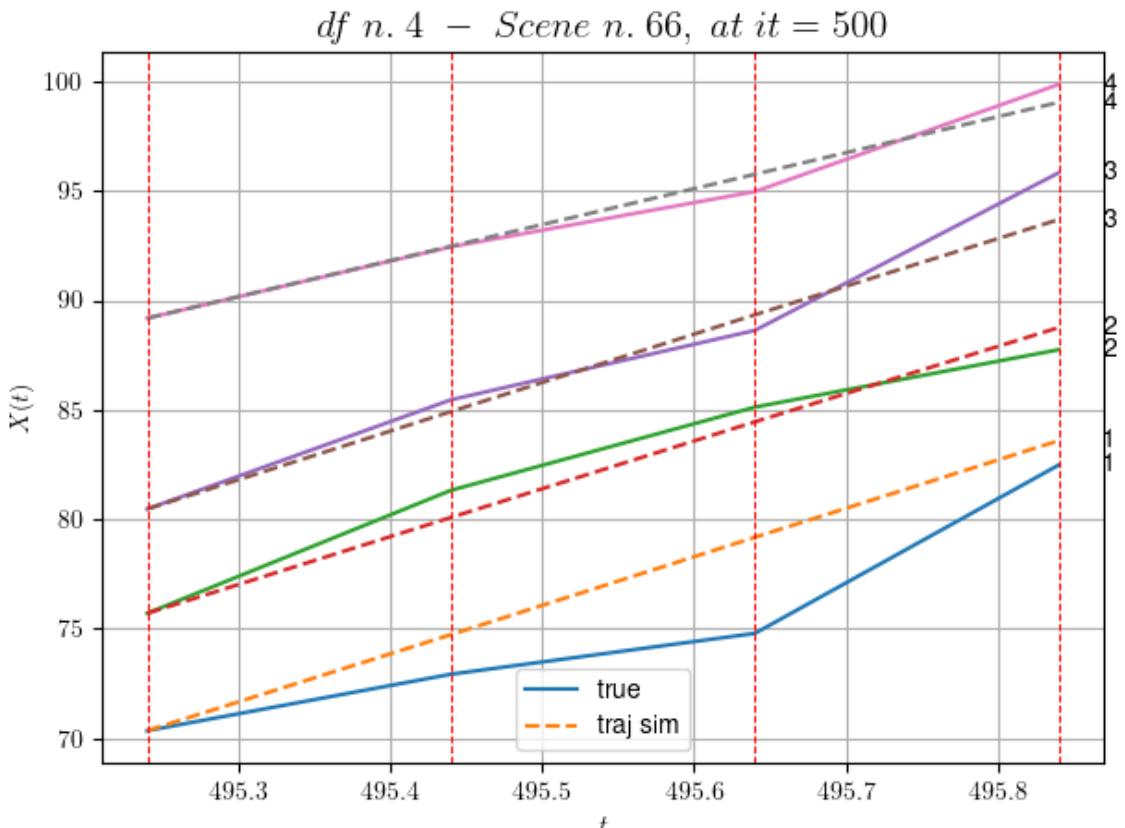
```

* v_ann: [22.23387336730957, 21.84284019470215, 22.
102853775024414, 16.437805482235774]

- Time interval n.2: [495.64, 495.84]
* y_true: [38.46439916 13.12188353 36.00587838]
* v_ann: [22.077844619750977, 21.533058166503906, 2
1.754785537719727, 16.437805482235774]

* err= 2.091839253704077
* Learning rate NN = 5.904899080633186e-05
* diff = 9.18135332064196e-05

```



For scene 66/69

```

* use LR_NN=0.0001 with err=10.477977998184654 at it=24
* v0_scn_mean = 17.52273691048319
* MAE = 2.0887416046876415
=====
```

df n.4, scene n.67/69

```
=====
```

We have 5 time intervals inside [541.84, 542.84]

```

- Time interval n.0: [541.84, 542.04]
* y_true: [15.49040827 18.57067001 15.06113134]
* v_ann: [18.83647918701172, 18.95725440979004, 18.
9548282623291, 25.311591600963254]
```

```

 - Time interval n.1: [542.04, 542.24]

 * y_true: [18.02057424 22.22093452 14.29121645]

 * v_ann: [18.07107925415039, 17.49964141845703, 17.

 40744972229004, 25.311591600963254]

 - Time interval n.2: [542.24, 542.44]

 * y_true: [23.32090187 15.10072652 30.16295254]

 * v_ann: [18.213768005371094, 17.87908363342285, 1

 7.714773178100586, 25.311591600963254]

 - Time interval n.3: [542.44, 542.64]

 * y_true: [17.96079787 19.72113387 17.42186984]

 * v_ann: [19.692167282104492, 20.900869369506836, 2

 1.14972686767578, 25.311591600963254]

 - Time interval n.4: [542.64, 542.84]

 * y_true: [20.261096 21.55138585 14.58174174]

 * v_ann: [18.955461502075195, 19.219318389892578, 1

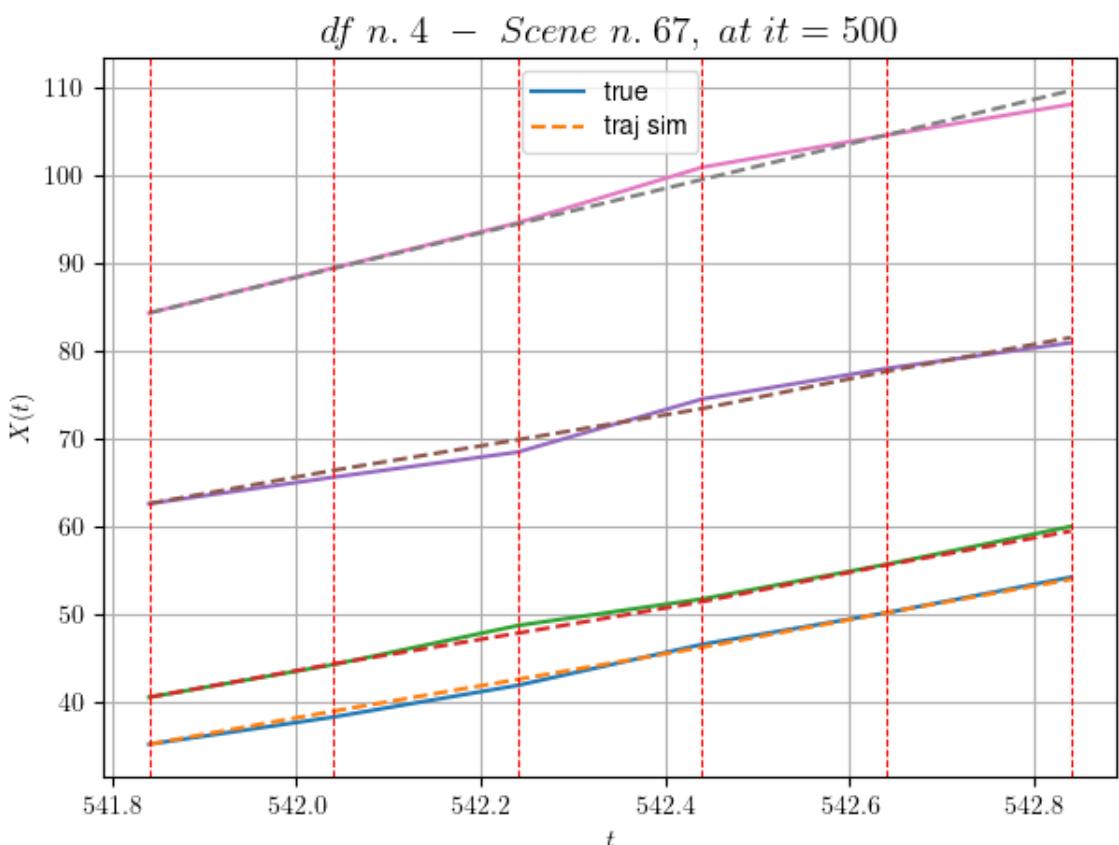
 9.286304473876953, 25.311591600963254]

* err= 0.4539573261338735

* Learning rate NN = 0.0003874204121530056

* diff = 0 0030438937475973926

```



For scene 67/69  
 \* use LR\_NN=0.001 with err=14.860913744653994 at it=24  
 \* v0\_scn\_mean = 25.686649016184756  
 \* MAE = 0.4539527340910039

---



---

df n.4, scene n.68/69

---



---

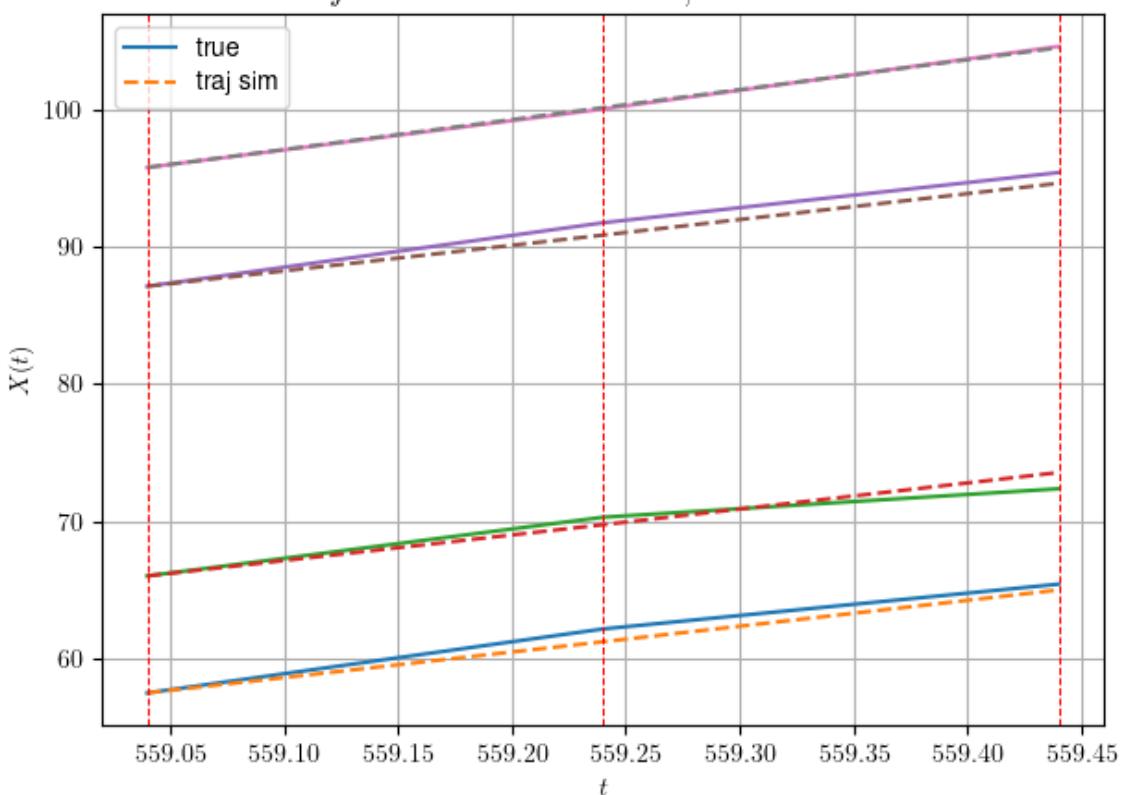
We have 2 time intervals inside [559.04, 559.44]

- Time interval n.0: [559.04, 559.24]
  - \* y\_true: [23.32160164 21.40183754 23.15354324]
  - \* v\_ann: [18.660619735717773, 18.674983978271484, 18.660764694213867, 21.82083405246926]

- Time interval n.1: [559.24, 559.44]
  - \* y\_true: [16.34126249 10.38103794 18.30306556]
  - \* v\_ann: [18.89037322998047, 19.04176139831543, 18.89200210571289, 21.82083405246926]

- \* err= 0.34930250374238636
- \* Learning rate NN = 7.289998757187277e-05
- \* diff = 2.4254247167010412e-05

*df n. 4 – Scene n. 68, at it = 500*



For scene 68/69

- \* use LR\_NN=0.0001 with err=6.020882077270918 at it=24
- \* v0\_scn\_mean = 22.47514071218455

\* MAE = 0.3487322366105771

---



---

```
For df=4 with 69 scenes, time taken: 1373.73


```

In df n.5/10 we have 66 scenes  
df n.5, scene n.0/66

---



---

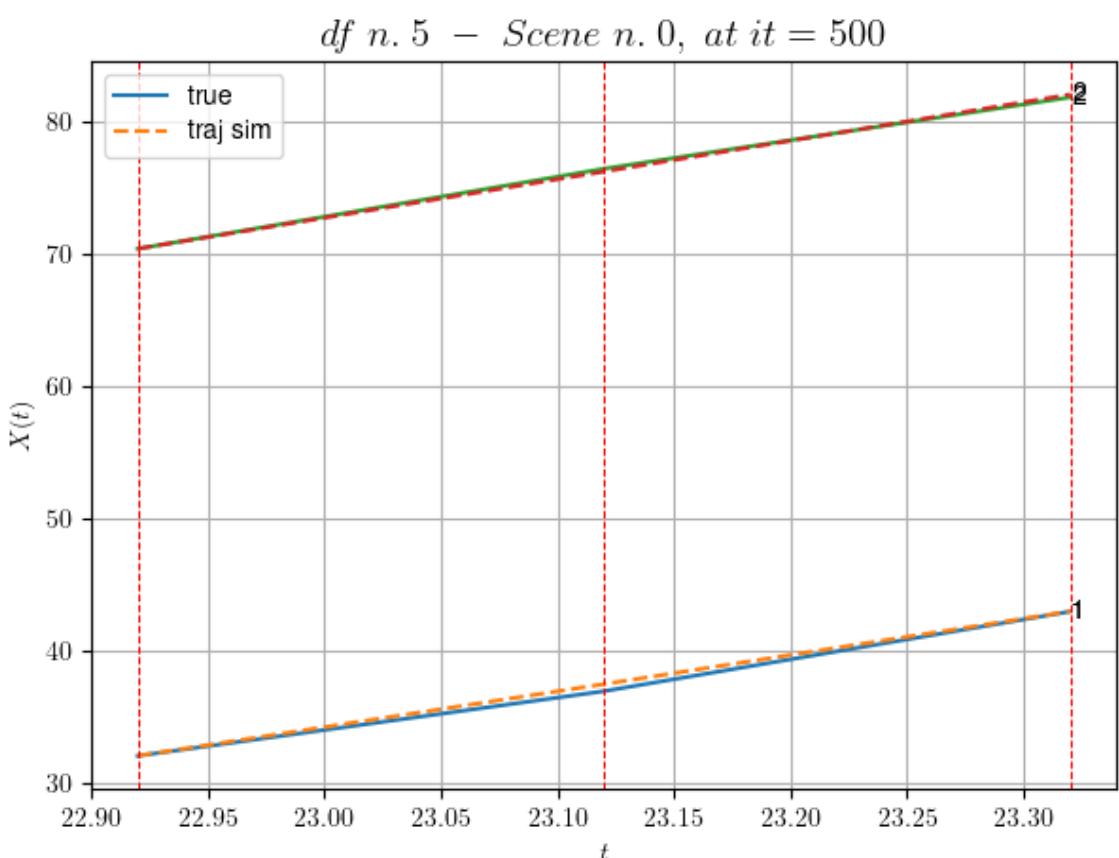
```
We have 2 time intervals inside [22.92,23.32]
- Time interval n.0: [22.92, 23.12]
 * y_true: [24.44058845]
 * v_ann: [27.109094619750977, 29.16329040956971]
```

---

```
- Time interval n.1: [23.12, 23.32]
 * y_true: [30.12094367]
 * v_ann: [27.51209831237793, 29.16329040956971]
```

---

```
* err= 0.0630477085955825
* Learning rate NN = 3.6449993785936385e-05
* diff = 2.7839675733470903e-06
```



For scene 0/66  
\* use LR\_NN=5e-05 with err=0.10178226966585299 at it=24

```
* v0_scn_mean = 29.19675879318051
* MAE = 0.06225969644148604
```

---



---

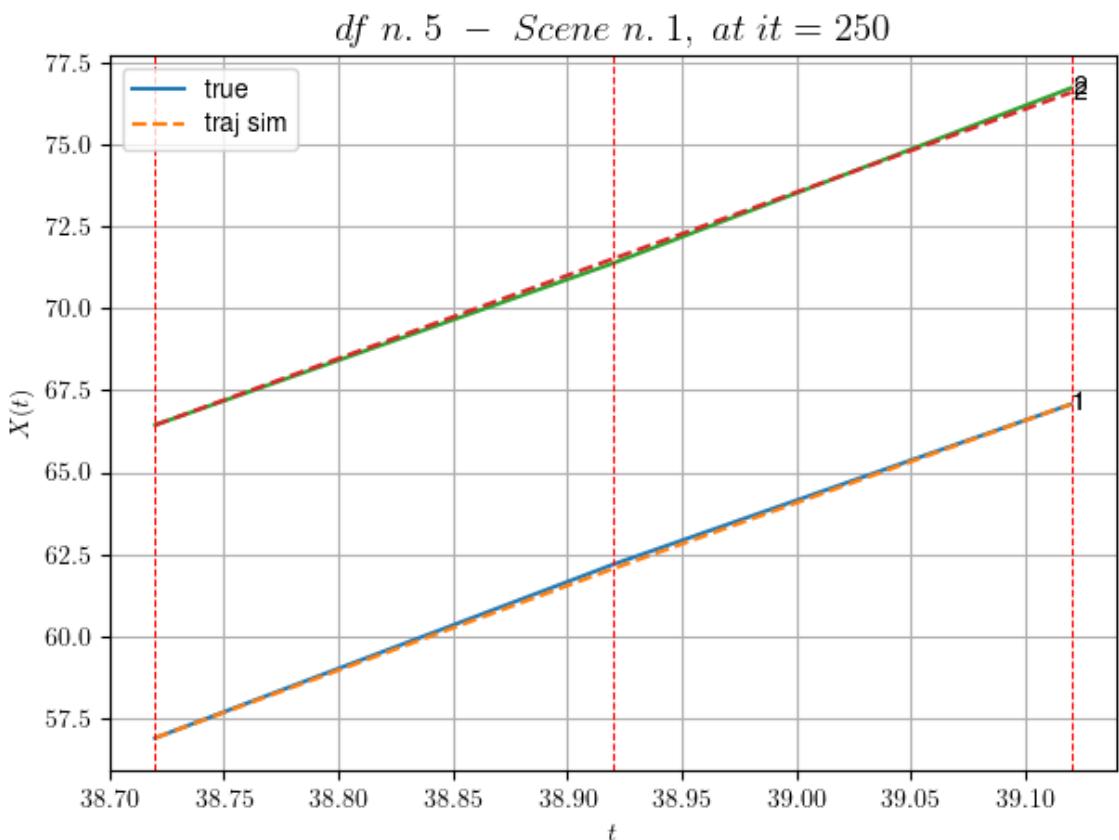
df n.5, scene n.1/66

---



---

```
We have 2 time intervals inside [38.72,39.12]
* err= 0.009143681166581274
* Learning rate NN = 0.0004500000213738531
* diff = 4.831817298194679e-07
```



For scene 1/66

```
* use LR_NN=0.0005 with err=0.680455637255884 at it=24
* v0_scn_mean = 25.742636411437378
* MAE = 0.008695522451967507
```

---



---

df n.5, scene n.2/66

---



---

```
We have 2 time intervals inside [47.12,47.52]
- Time interval n.0: [47.12, 47.32]
 * y_true: [27.13157074]
 * v_ann: [29.599058151245117, 18.77182126996346]
```

---

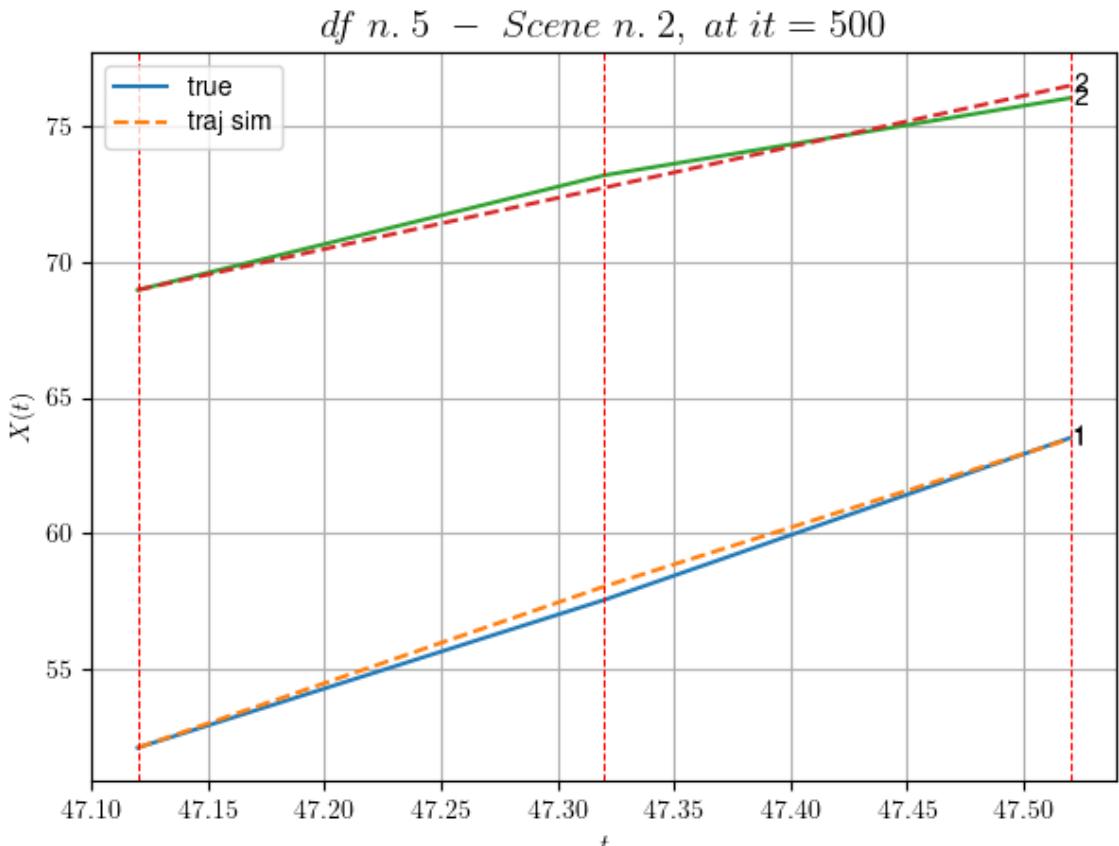


---

- Time interval n.1: [47.32, 47.52]  
 \* y\_true: [29.78215199]  
 \* v\_ann: [27.105974197387695, 18.77182126996346]

---

\* err= 0.11050502783864938  
 \* Learning rate NN = 7.289998757187277e-05  
 \* diff = 5.026544290090418e-06



For scene 2/66

\* use LR\_NN=0.0001 with err=4.658184183515955 at it=24  
 \* v0\_scn\_mean = 19.220948419079075  
 \* MAE = 0.10993115983653581

---



---

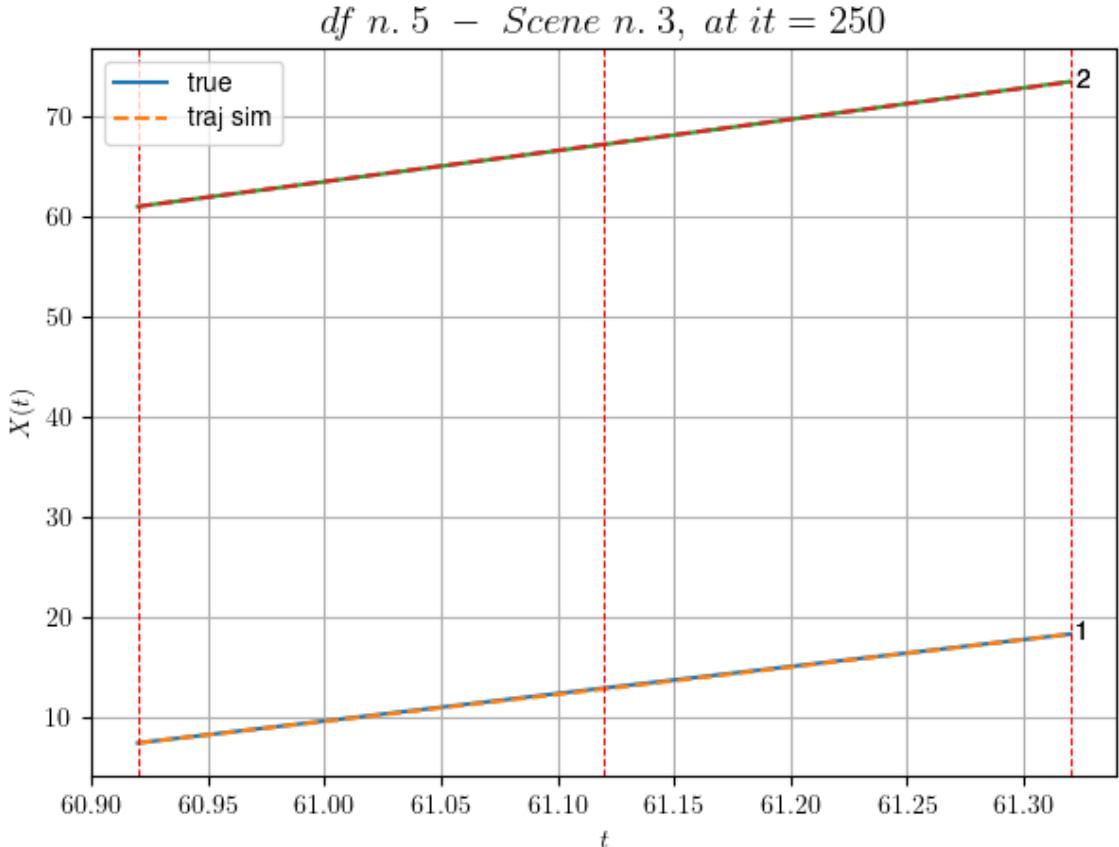
df n.5, scene n.3/66

---



---

We have 2 time intervals inside [60.92,61.32]  
 \* err= 0.002030281505005755  
 \* Learning rate NN = 4.499999704421498e-05  
 \* diff = 1.3390003985973287e-07



For scene 3/66

- \* use LR\_NN=5e-05 with err=0.04520069510177548 at it=24
- \* v0\_scn\_mean = 31.014497606033874
- \* MAE = 0.0019943895735141833

---



---

df n.5, scene n.4/66

---



---

We have 5 time intervals inside [64.32, 65.32]

- Time interval n.0: [64.32, 64.52]
  - \* y\_true: [37.14124909]
  - \* v\_ann: [35.97071838378906, 32.23387857341351]

---

- Time interval n.1: [64.52, 64.72]
  - \* y\_true: [31.68144271]
  - \* v\_ann: [34.96523666381836, 32.23387857341351]

---

- Time interval n.2: [64.72, 64.92]
  - \* y\_true: [30.88182123]
  - \* v\_ann: [34.72016906738281, 32.23387857341351]

---

- Time interval n.3: [64.92, 65.12]
  - \* y\_true: [37.7230345]

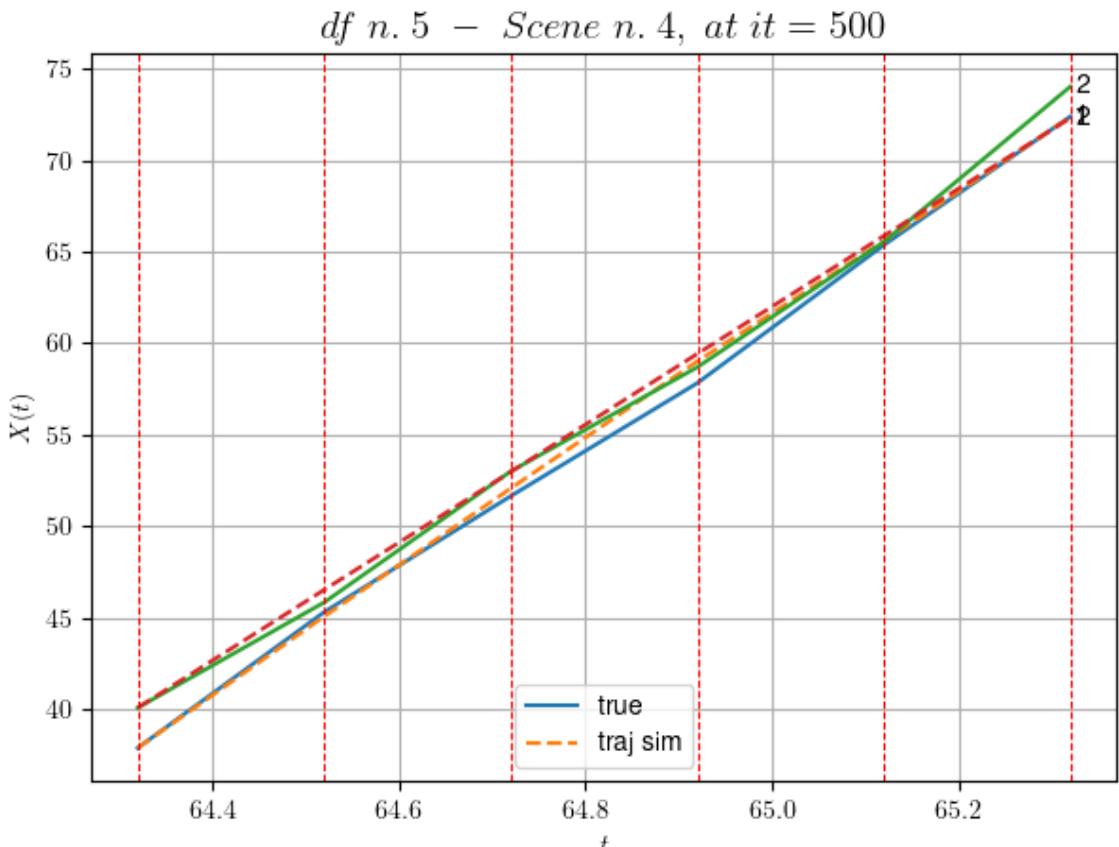
```
* v_ann: [32.81550979614258, 32.23387857341351]
```

---

```
- Time interval n.4: [65.12, 65.32]
* y_true: [35.12139112]
* v_ann: [33.92827606201172, 32.23387857341351]
```

---

```
* err= 0.478768794763546
* Learning rate NN = 0.0019371019443497062
* diff = 0.006183601174951703
```



For scene 4/66

```
* use LR_NN=0.005 with err=1.7536070755919015 at it=24
* v0_scn_mean = 32.14452343049405
* MAE = 0.4745025786676594
```

---



---

df n.5, scene n.5/66

---



---

```
We have 4 time intervals inside [73.32, 74.12]
- Time interval n.0: [73.32, 73.52]
* y_true: [22.4509602]
* v_ann: [25.493806838989258, 30.98385449886046]
```

---

```
- Time interval n.1: [73.52, 73.72]
```

```
* y_true: [19.77098046]
* v_ann: [25.32387351989746, 30.98385449886046]
```

---

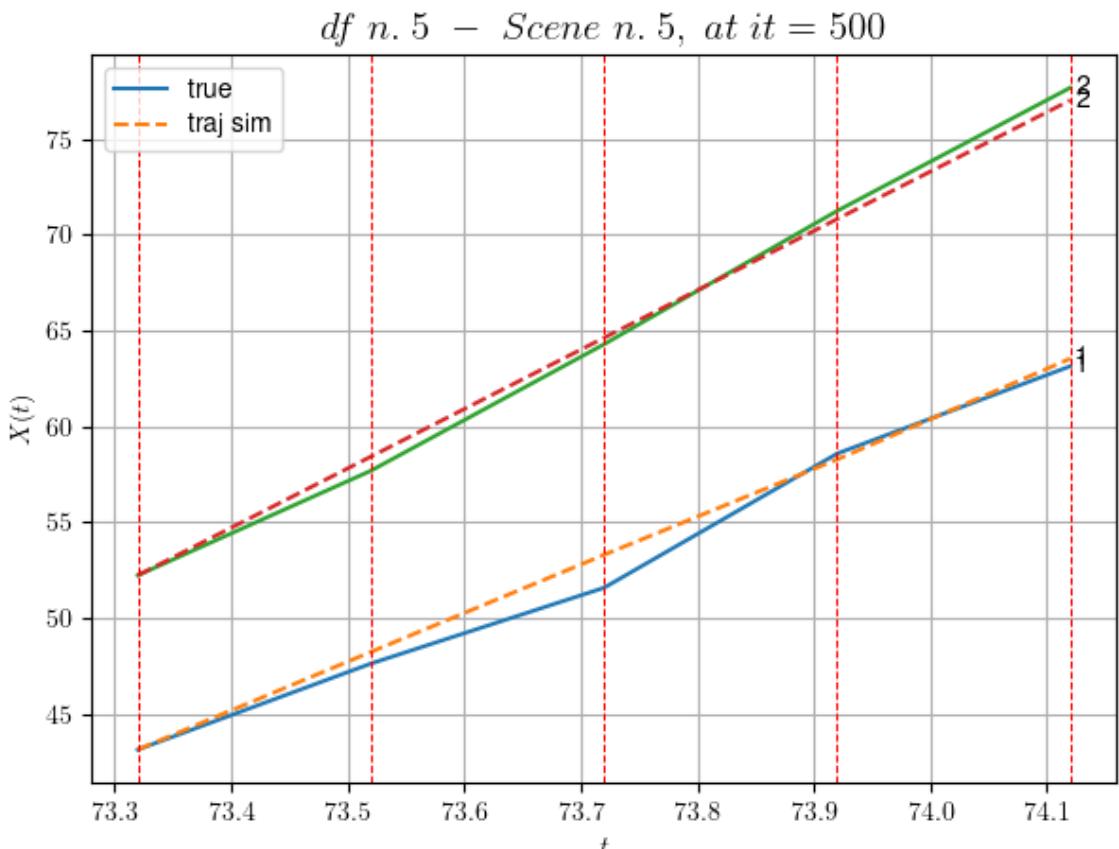
```
- Time interval n.2: [73.72, 73.92]
* y_true: [35.00219048]
* v_ann: [24.883399963378906, 30.98385449886046]
```

---

```
- Time interval n.3: [73.92, 74.12]
* y_true: [22.79172486]
* v_ann: [26.29074478149414, 30.98385449886046]
```

---

```
* err= 0.48412195374757117
* Learning rate NN = 2.3914839403005317e-05
* diff = 0.007595609727626851
```



For scene 5/66

```
* use LR_NN=5e-05 with err=0.5336682037786898 at it=24
* v0_scn_mean = 30.944500318913935
* MAE = 0.48412195374757117
```

---



---



---

df n.5, scene n.6/66

---



---



---

We have 2 time intervals inside [77.52, 77.92]

- Time interval n.0: [77.52, 77.72]
  - \* y\_true: [29.39148069]
  - \* v\_ann: [30.08934783935547, 29.979095396352825]

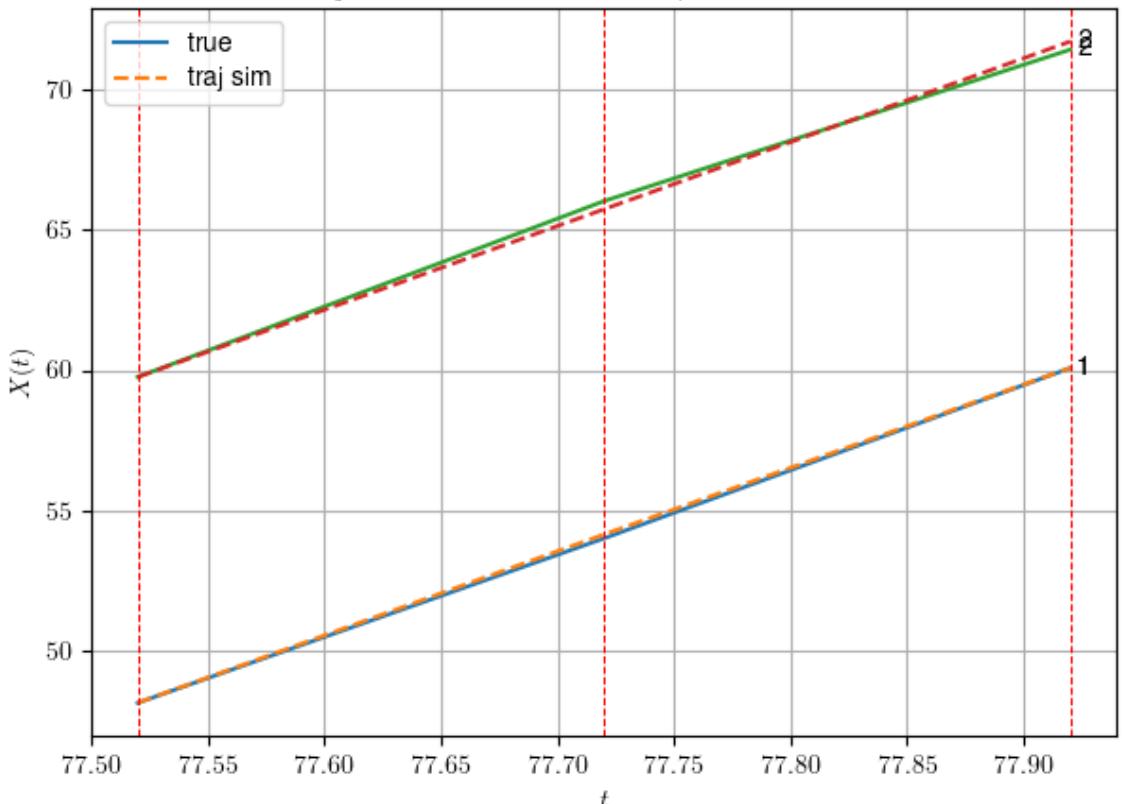
---

- Time interval n.1: [77.72, 77.92]
  - \* y\_true: [30.4419639]
  - \* v\_ann: [29.76479721069336, 29.979095396352825]

---

- \* err= 0.031411516347839
- \* Learning rate NN = 0.00036449998151510954
- \* diff = 6.106998332182367e-05

df n. 5 – Scene n. 6, at it = 500



For scene 6/66

- \* use LR\_NN=0.0005 with err=0.028586027417605242 at it=24
- \* v0\_scn\_mean = 29.979931580498395
- \* MAE = 0.031411516347839

---



---

df n.5, scene n.7/66

We have 3 time intervals inside [78.72, 79.32]

- Time interval n.0: [78.72, 78.92]
  - \* y\_true: [30.67106023]
  - \* v\_ann: [27.39788246154785, 28.965407295611357]

---

```

- Time interval n.1: [78.92, 79.12]

* y_true: [32.90145429]

* v_ann: [28.445720672607422, 28.965407295611357]

```

```

- Time interval n.2: [79.12, 79.32]

* y_true: [21.18125424]

* v_ann: [29.212512969970703, 28.965407295611357]

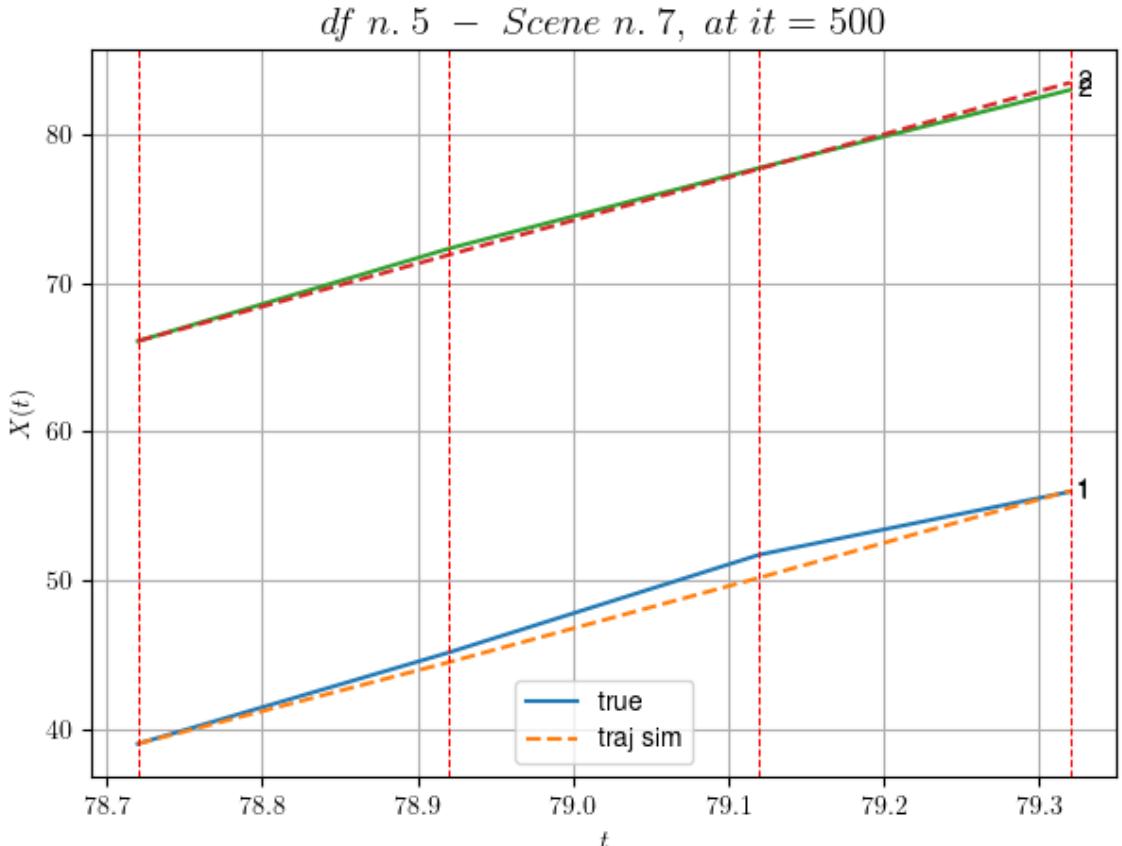
```

```

* err= 0.405245435885271

* Learning rate NN = 2.952449540316593e-05

* diff = 0.00244285952319534
```



For scene 7/66

```

* use LR_NN=5e-05 with err=0.43716991278761885 at it=24
* v0_scn_mean = 29.00679100377906
* MAE = 0.405245435885271
=====
```

df n.5, scene n.8/66

```

=====
We have 7 time intervals inside [96.12,97.52]
- Time interval n.0: [96.12, 96.32]
* y_true: [24.32039328]
* v_ann: [25.127939224243164, 24.583587401272215]
```

```


- Time interval n.1: [96.32, 96.52]
* y_true: [20.210445]
* v_ann: [25.037012100219727, 24.583587401272215]

- Time interval n.2: [96.52, 96.72]
* y_true: [26.25074807]
* v_ann: [25.253429412841797, 24.583587401272215]

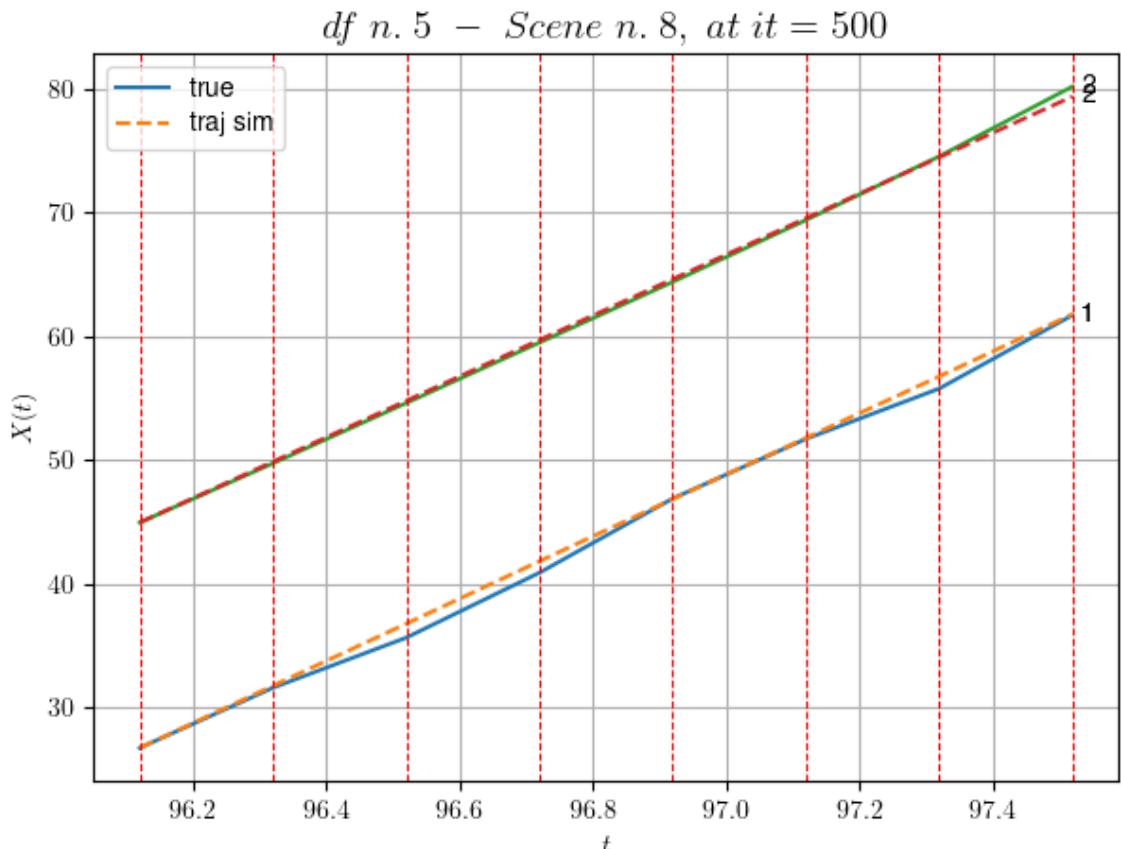
- Time interval n.3: [96.72, 96.92]
* y_true: [29.96110103]
* v_ann: [25.098255157470703, 24.583587401272215]

- Time interval n.4: [96.92, 97.12]
* y_true: [24.08111227]
* v_ann: [24.72468376159668, 24.583587401272215]

- Time interval n.5: [97.12, 97.32]
* y_true: [20.33118515]
* v_ann: [24.800384521484375, 24.583587401272215]

- Time interval n.6: [97.32, 97.52]
* y_true: [29.65208479]
* v_ann: [25.19698715209961, 24.583587401272215]

* err= 0.24726097139360836
* Learning rate NN = 1.2709323527815286e-05
* diff = 0.001222050701554341
```



For scene 8/66

\* use LR\_NN=5e-05 with err=10.052504564104481 at it=24  
\* v0\_scn\_mean = 24.80024390517983  
\* MAE = 0.24389160312099756

---

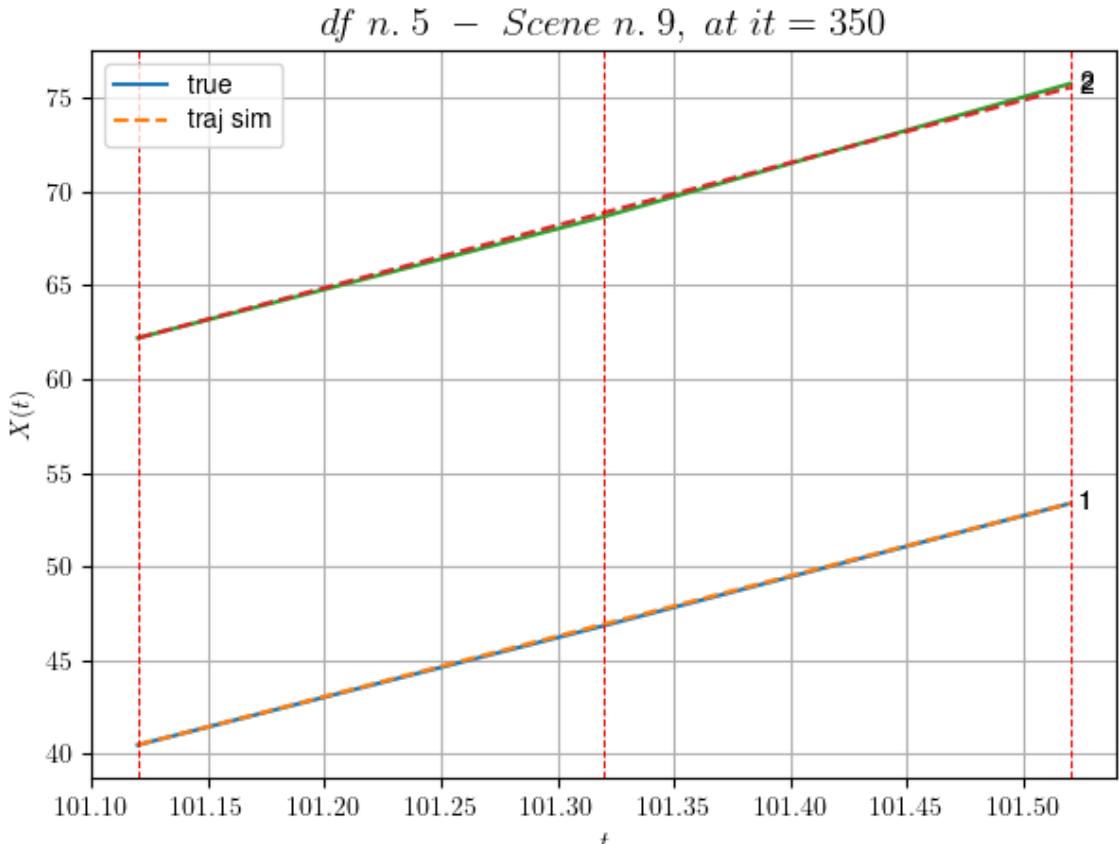
---

df n.5, scene n.9/66

---

---

We have 2 time intervals inside [101.12,101.52]  
\* err= 0.01572301476022805  
\* Learning rate NN = 4.049999552080408e-05  
\* diff = 2.9831624743376084e-08



For scene 9/66

- \* use LR\_NN=5e-05 with err=0.45056759326653556 at it=24
  - \* v0\_scn\_mean = 33.21490567842052
  - \* MAE = 0.015722994048239656
- 
- 

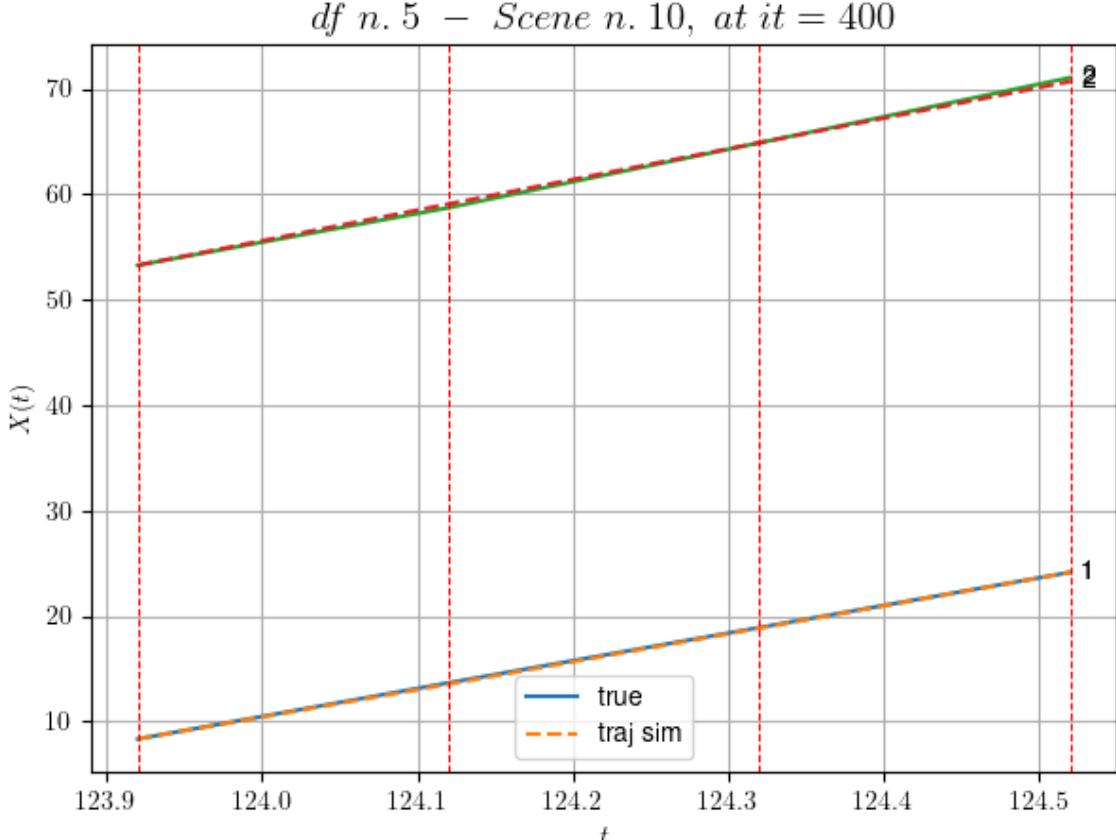
df n.5, scene n.10/66

---

---

We have 3 time intervals inside [123.92,124.52]

- \* err= 0.03548700534954563
- \* Learning rate NN = 3.2804993679746985e-05
- \* diff = 1.7365971008431735e-08



For scene 10/66

- \* use LR\_NN=5e-05 with err=0.0634286417920815 at it=24
- \* v0\_scn\_mean = 29.113749771334568
- \* MAE = 0.030818507682723574

---



---

df n.5, scene n.11/66

---



---

We have 5 time intervals inside [125.12, 126.12]

- Time interval n.0: [125.12, 125.32]
  - \* y\_true: [30.50092783]
  - \* v\_ann: [24.013652801513672, 29.269210394723828]

---

- Time interval n.1: [125.32, 125.52]
  - \* y\_true: [27.94108841]
  - \* v\_ann: [26.894371032714844, 29.269210394723828]

---

- Time interval n.2: [125.52, 125.72]
  - \* y\_true: [21.64103704]
  - \* v\_ann: [27.64748764038086, 29.269210394723828]

---

- Time interval n.3: [125.72, 125.92]
  - \* y\_true: [30.40181251]

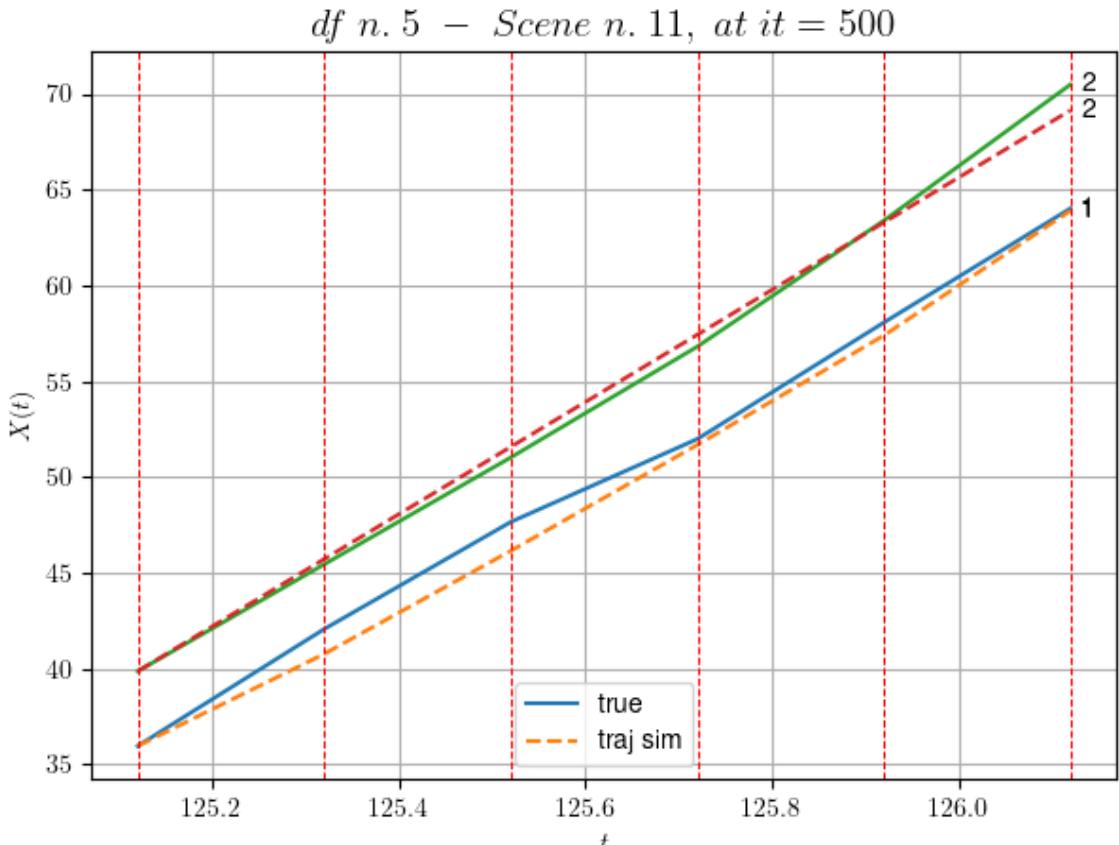
```
* v_ann: [28.54054832458496, 29.269210394723828]
```

---

```
- Time interval n.4: [125.92, 126.12]
* y_true: [29.76231357]
* v_ann: [32.54628372192383, 29.269210394723828]
```

---

```
* err= 0.5924843434185255
* Learning rate NN = 0.0019371019443497062
* diff = 0.027784635679093395
```



For scene 11/66

```
* use LR_NN=0.005 with err=0.6510853273077148 at it=24
* v0_scn_mean = 29.298441978928828
* MAE = 0.42288564395299244
```

---



---

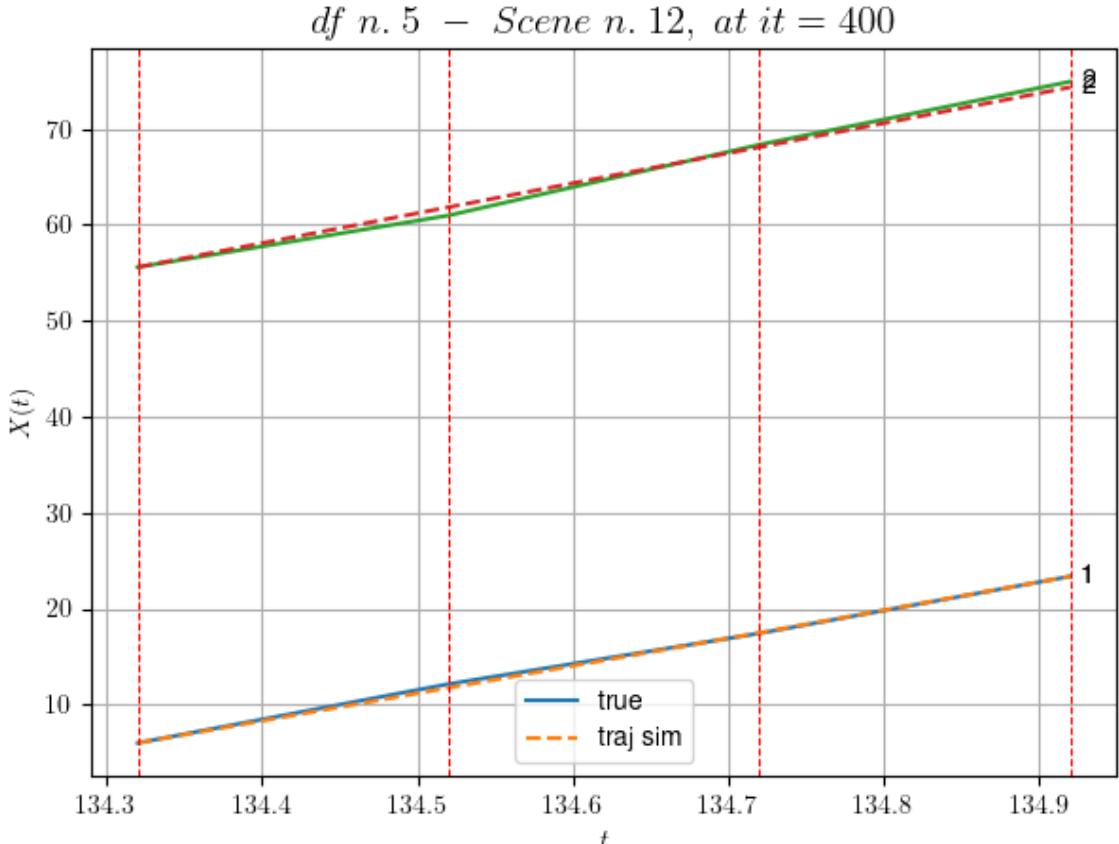
df n.5, scene n.12/66

---



---

```
We have 3 time intervals inside [134.32,134.92]
* err= 0.16489334084024432
* Learning rate NN = 3.2804993679746985e-05
* diff = 3.225497480219275e-08
```



For scene 12/66

- \* use LR\_NN=5e-05 with err=0.36621461019660145 at it=24
- \* v0\_scn\_mean = 31.1865856198986
- \* MAE = 0.16489330776960734

---



---

df n.5, scene n.13/66

---



---

We have 6 time intervals inside [145.92, 147.12]

- Time interval n.0: [145.92, 146.12]
  - \* y\_true: [20.61022162]
  - \* v\_ann: [16.56509780883789, 25.995964105863543]

---

- Time interval n.1: [146.12, 146.32]
  - \* y\_true: [23.57038291]
  - \* v\_ann: [18.240610122680664, 25.995964105863543]

---

- Time interval n.2: [146.32, 146.52]
  - \* y\_true: [23.12047758]
  - \* v\_ann: [20.3253116607666, 25.995964105863543]

---

- Time interval n.3: [146.52, 146.72]
  - \* y\_true: [14.69037585]

---

\* v\_ann: [22.05210304260254, 25.995964105863543]

---

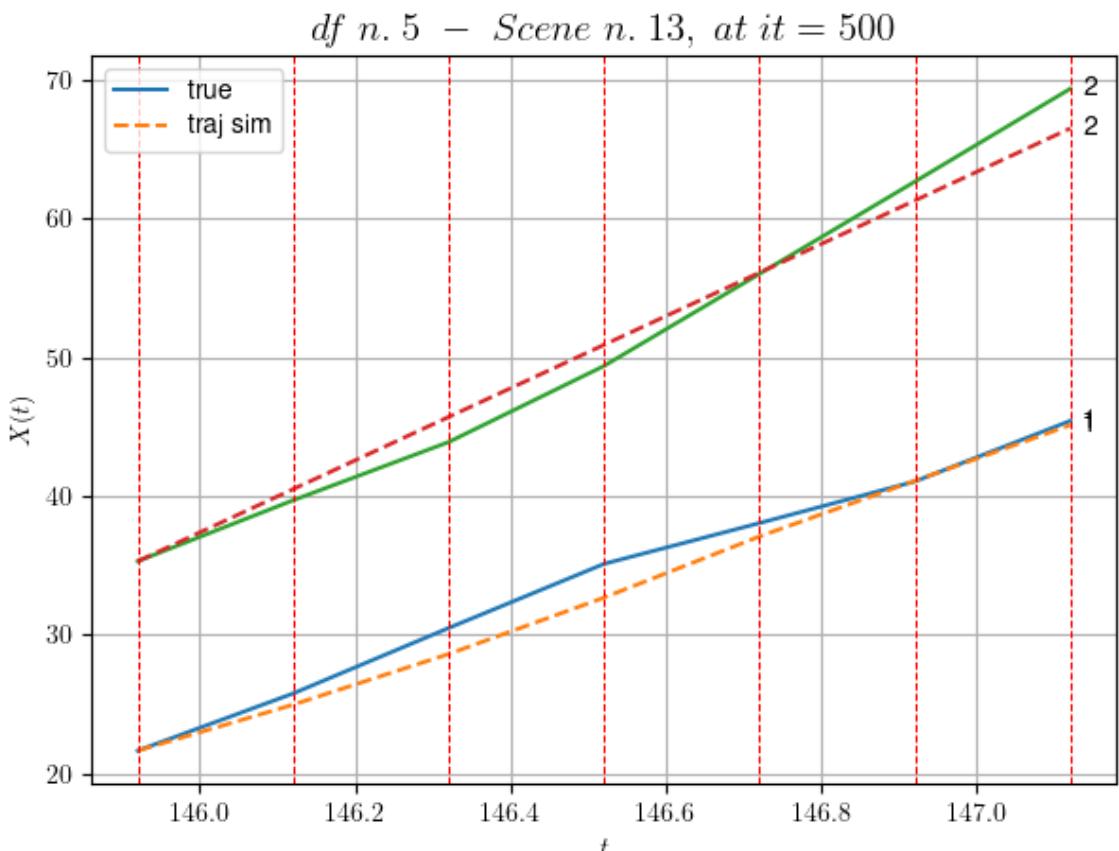
- Time interval n.4: [146.72, 146.92]  
 \* y\_true: [15.01046474]  
 \* v\_ann: [20.045455932617188, 25.995964105863543]

---

- Time interval n.5: [146.92, 147.12]  
 \* y\_true: [21.83491468]  
 \* v\_ann: [20.071842193603516, 25.995964105863543]

---

\* err= 1.9564216139201367  
 \* Learning rate NN = 0.00031381050939671695  
 \* diff = 0.04909253443975814



For scene 13/66

\* use LR\_NN=0.001 with err=4.152181309993936 at it=24  
 \* v0\_scn\_mean = 26.156125541598165  
 \* MAE = 1.466285166709619

---



---

df n.5, scene n.14/66

---



---

We have 4 time intervals inside [149.92,150.72]  
 - Time interval n.0: [149.92, 150.12]

```
* y_true: [26.68049148]
* v_ann: [31.753068923950195, 23.102993584361446]
```

---

```
- Time interval n.1: [150.12, 150.32]
* y_true: [38.1410546]
* v_ann: [30.312122344970703, 23.102993584361446]
```

---

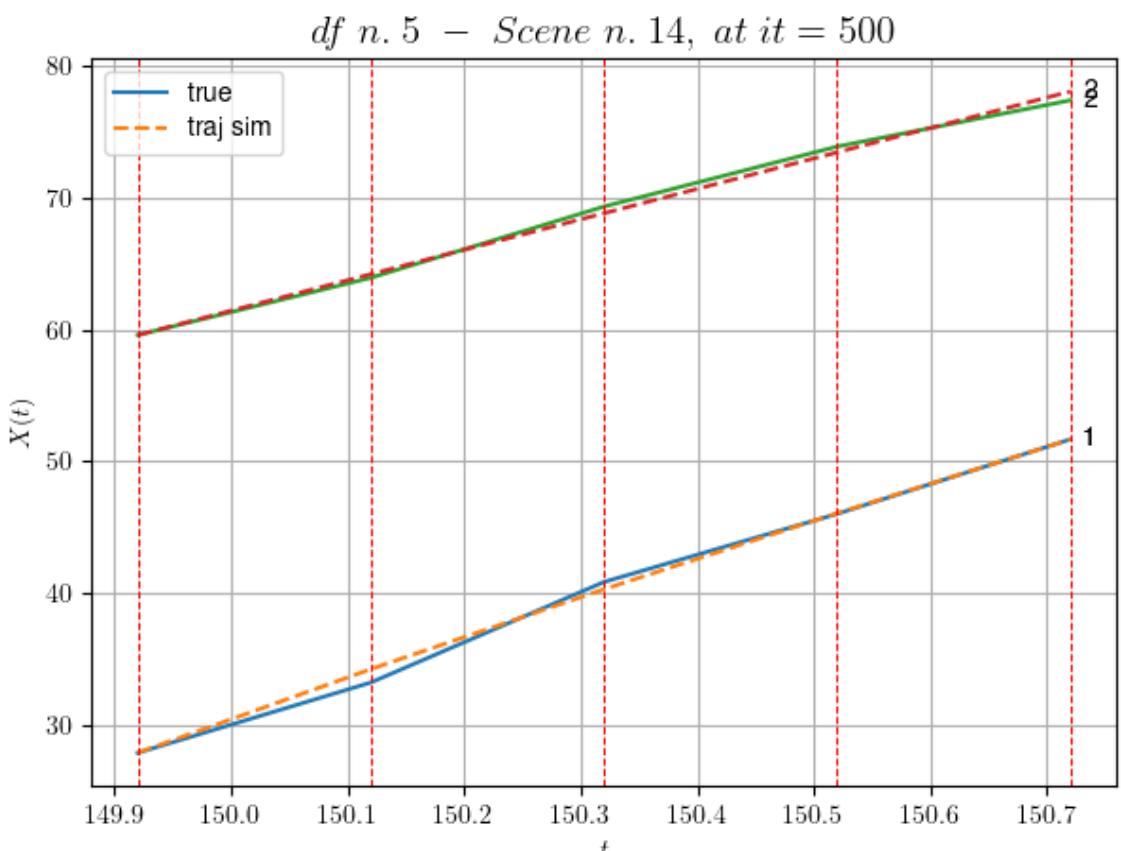
```
- Time interval n.2: [150.32, 150.52]
* y_true: [25.82092379]
* v_ann: [28.824119567871094, 23.102993584361446]
```

---

```
- Time interval n.3: [150.52, 150.72]
* y_true: [28.28147438]
* v_ann: [27.990537643432617, 23.102993584361446]
```

---

```
* err= 0.2313598763525863
* Learning rate NN = 2.3914839403005317e-05
* diff = 5.141624329768613e-06
```



For scene 14/66

```
* use LR_NN=5e-05 with err=6.126079313402686 at it=24
* v0_scn_mean = 23.37887384093446
* MAE = 0.23132328353750228
```

```
df n.5, scene n.15/66
```

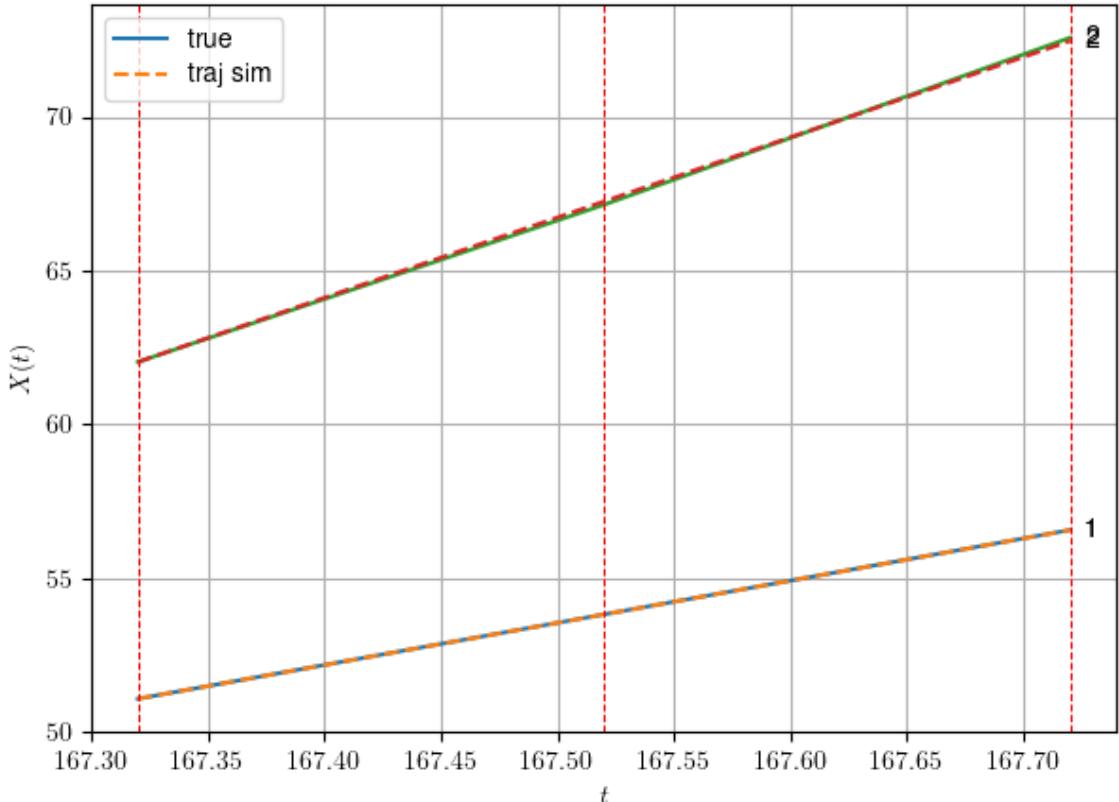
---



---

We have 2 time intervals inside [167.32,167.72]  
 \* err= 0.0038199893865125344  
 \* Learning rate NN = 0.0008099999977275729  
 \* diff = 8.728656717667607e-07

*df n. 5 – Scene n. 15, at it = 350*



For scene 15/66

- \* use LR\_NN=0.001 with err=0.5156418164604029 at it=24
- \* v0\_scn\_mean = 26.329696318294122
- \* MAE = 0.00351292610276143

---



---

```
df n.5, scene n.16/66
```

---



---

We have 3 time intervals inside [175.72,176.32]

- Time interval n.0: [175.72, 175.92]
  - \* y\_true: [28.75187595]
  - \* v\_ann: [30.68343734741211, 28.858418065401406]

---



---

- Time interval n.1: [175.92, 176.12]
  - \* y\_true: [30.6425727]
  - \* v\_ann: [30.379653930664062, 28.858418065401406]

---



---

```

- Time interval n.2: [176.12, 176.32]

* y_true: [31.90303719]

* v_ann: [30.206823348999023, 28.858418065401406]

```

```

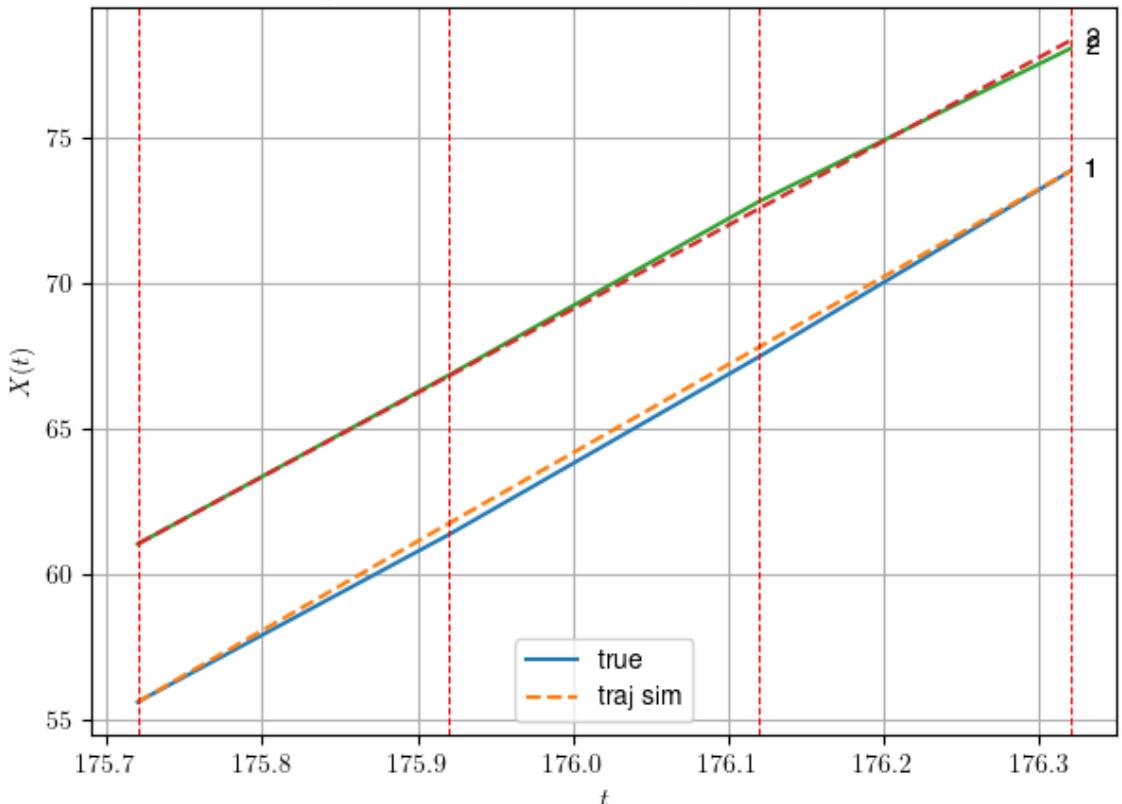
* err= 0.049667582598571666

* Learning rate NN = 0.0002952449722215533

* diff = 1.8700127565010605e-05

```

*df n. 5 – Scene n. 16, at it = 500*



For scene 16/66

```

* use LR_NN=0.0005 with err=0.1718336503454042 at it=24

* v0_scn_mean = 28.9040813427764

* MAE = 0.04905775861762861
=====
```

df n.5, scene n.17/66

```

=====

=====

We have 4 time intervals inside [193.72,194.52]

```

```

- Time interval n.0: [193.72, 193.92]

* y_true: [24.05562773]

* v_ann: [24.13155746459961, 30.811434876560853]

```

```

- Time interval n.1: [193.92, 194.12]

* y_true: [26.42578066]

* v_ann: [24.341800689697266, 30.811434876560853]
```

```

- Time interval n.2: [194.12, 194.32]

* y_true: [24.49095616]

* v_ann: [24.644241333007812, 30.811434876560853]

```

```

- Time interval n.3: [194.32, 194.52]

* y_true: [23.20107316]

* v_ann: [24.89801597595215, 30.811434876560853]

```

```

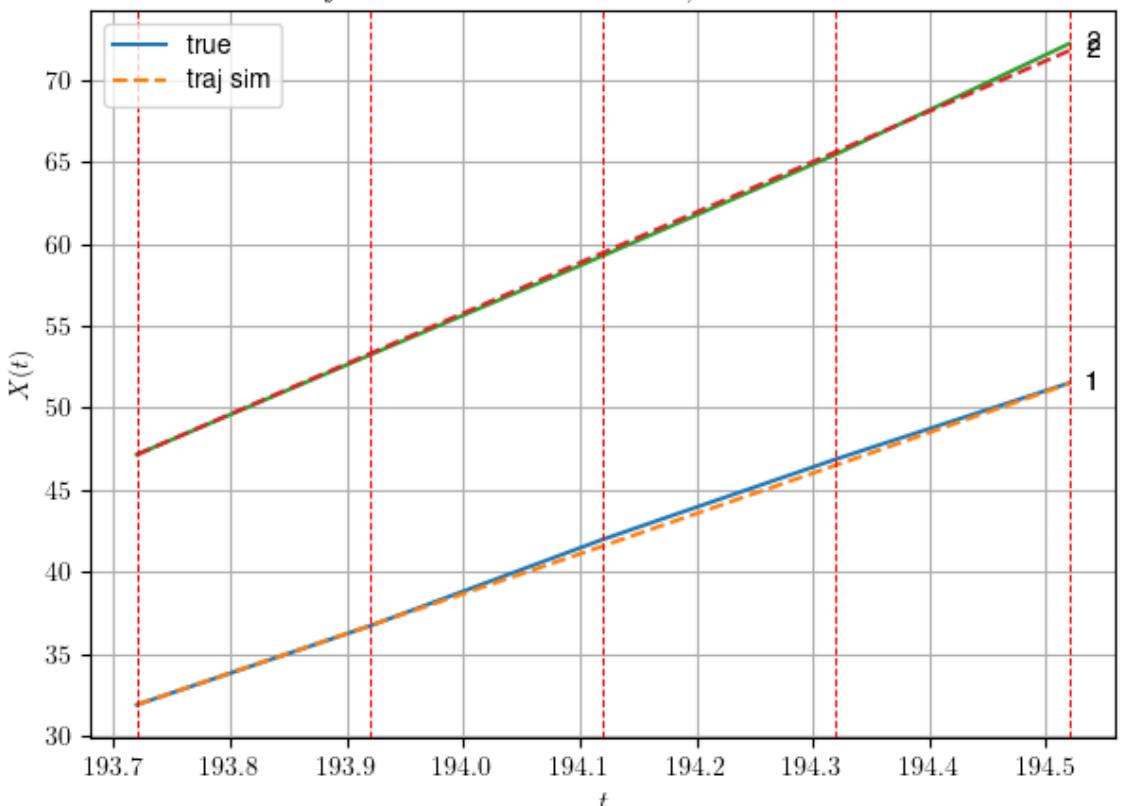
* err= 0.05534025737933511

* Learning rate NN = 2.3914839403005317e-05

* diff = 0.0002275461071210500

```

*df n. 5 – Scene n. 17, at it = 500*



For scene 17/66

```

* use LR_NN=5e-05 with err=0.33620009637338033 at it=24

* v0_scn_mean = 30.778977481504473

* MAE = 0.05534025737933511

=====
```

df n.5, scene n.18/66

```

=====
```

```

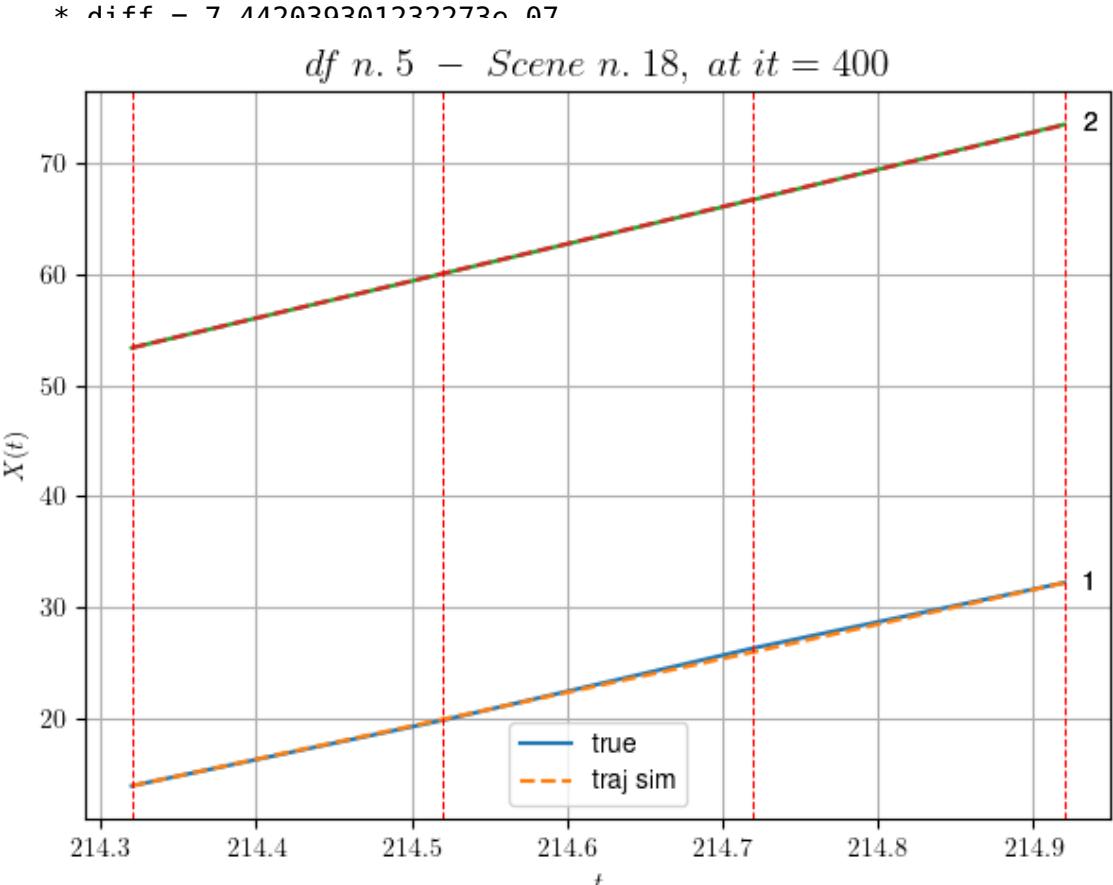
=====

We have 3 time intervals inside [214.32,214.92]

* err= 0.016513878210374703

* Learning rate NN = 6.560998735949397e-05

```



For scene 18/66

\* use LR\_NN=0.0001 with err=0.8506827527568546 at it=24  
\* v0\_scn\_mean = 33.24581884100853  
\* MAE = 0.01563282602143209

---

---

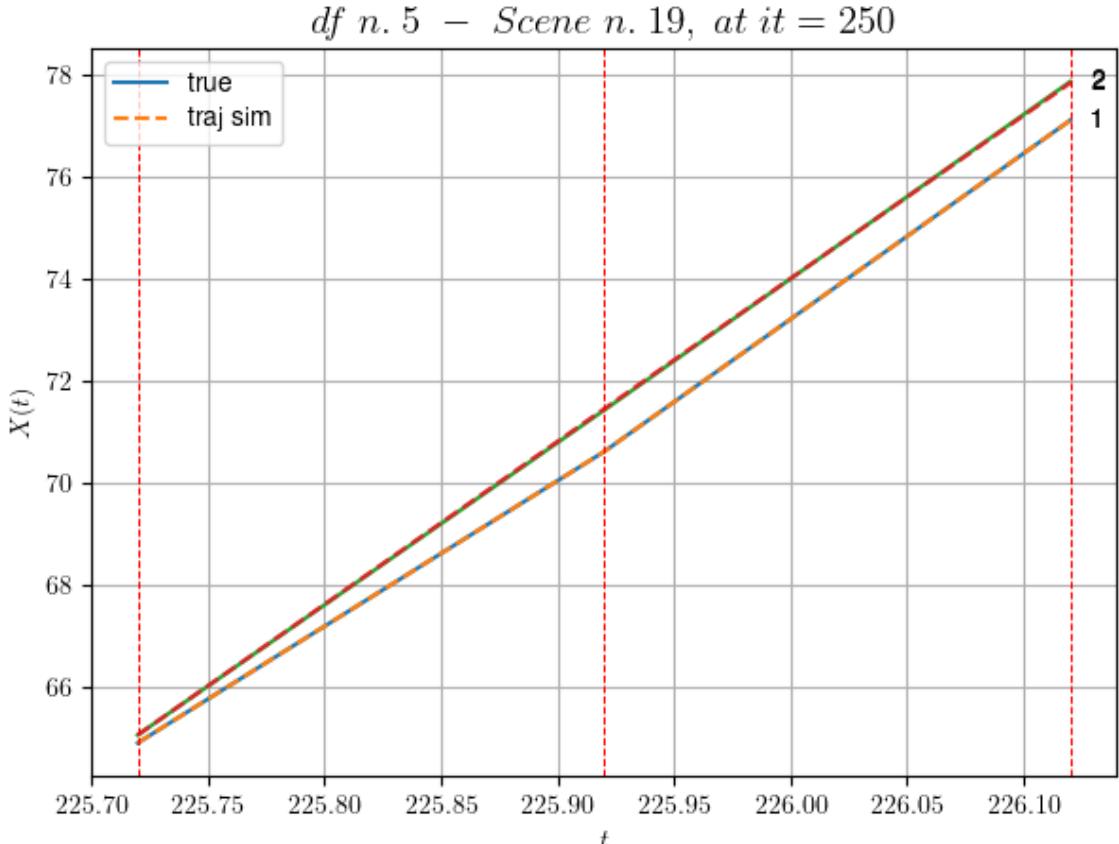
df n.5, scene n.19/66

---

---

We have 2 time intervals inside [225.72,226.12]

\* err= 0.0002198692093902678  
\* Learning rate NN = 0.008999999612569809  
\* diff = 1.1166007670389342e-07



For scene 19/66

- \* use LR\_NN=0.01 with err=0.13989401561621007 at it=24
- \* v0\_scn\_mean = 31.85976366274825
- \* MAE = 0.0002198692093902678

---



---

df n.5, scene n.20/66

---



---

We have 6 time intervals inside [226.72, 227.92]

- Time interval n.0: [226.72, 226.92]
  - \* y\_true: [35.91081855]
  - \* v\_ann: [36.11263656616211, 32.69366457961326]

---

- Time interval n.1: [226.92, 227.12]
  - \* y\_true: [29.63097708]
  - \* v\_ann: [36.88707733154297, 32.69366457961326]

---

- Time interval n.2: [227.12, 227.32]
  - \* y\_true: [32.76145219]
  - \* v\_ann: [32.86723709106445, 32.69366457961326]

---

- Time interval n.3: [227.32, 227.52]
  - \* y\_true: [36.53210553]

\* v\_ann: [33.367618560791016, 32.69366457961326]

---

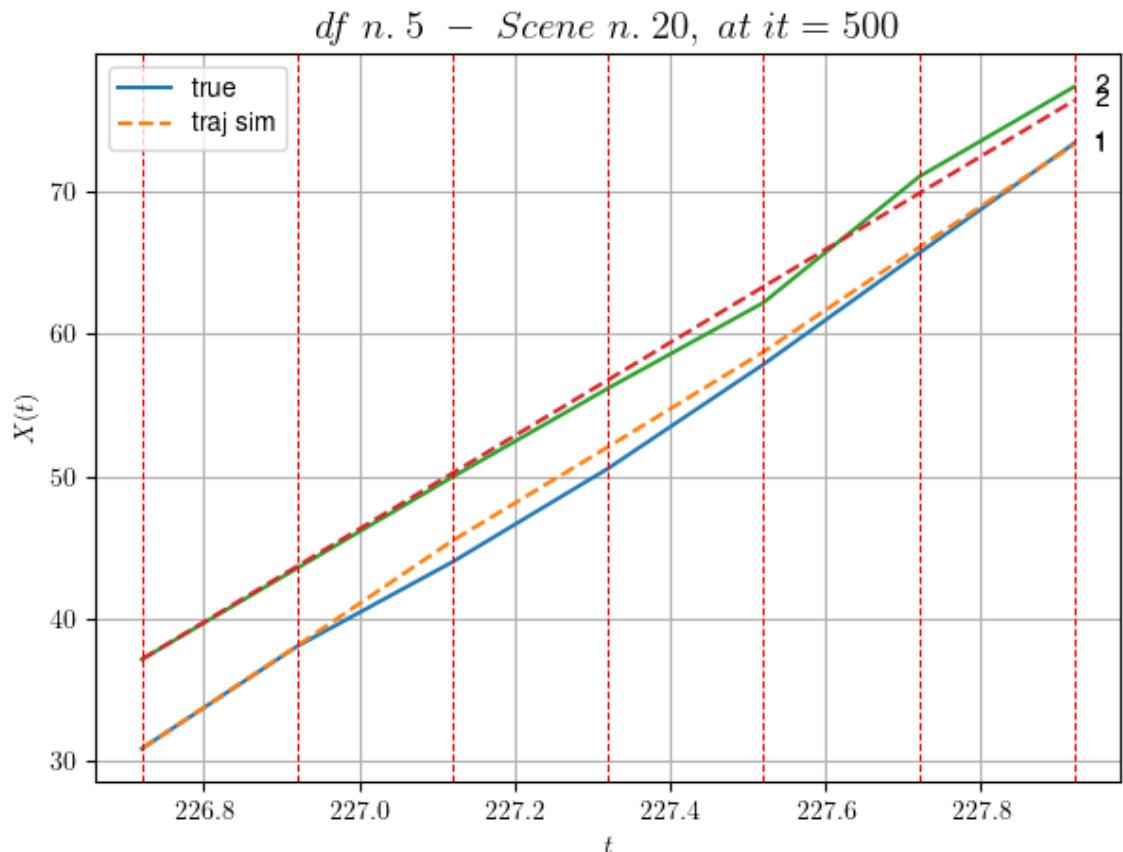
- Time interval n.4: [227.52, 227.72]  
 \* y\_true: [39.00291249]  
 \* v\_ann: [36.678585052490234, 32.69366457961326]

---

- Time interval n.5: [227.72, 227.92]  
 \* y\_true: [38.60361644]  
 \* v\_ann: [36.01865005493164, 32.69366457961326]

---

\* err= 0.6749996954392874  
 \* Learning rate NN = 0.00031381050939671695  
 \* diff = 0.017276757748239113



For scene 20/66

\* use LR\_NN=0.001 with err=3.6875435684456077 at it=24  
 \* v0\_scn\_mean = 32.58591799644934  
 \* MAE = 0.6749996954392874

---



---

df n.5, scene n.21/66

---



---



---



---

We have 6 time intervals inside [232.32,233.52]  
 - Time interval n.0: [232.32, 232.52]

```
* y_true: [25.45023451]
* v_ann: [19.492219924926758, 31.537257787029347]
```

```


- Time interval n.1: [232.52, 232.72]
* y_true: [24.75033502]
* v_ann: [22.170639038085938, 31.537257787029347]
```

```


- Time interval n.2: [232.72, 232.92]
* y_true: [25.99050989]
* v_ann: [26.54767608642578, 31.537257787029347]
```

```


- Time interval n.3: [232.92, 233.12]
* y_true: [23.25058741]
* v_ann: [28.025543212890625, 31.537257787029347]
```

```

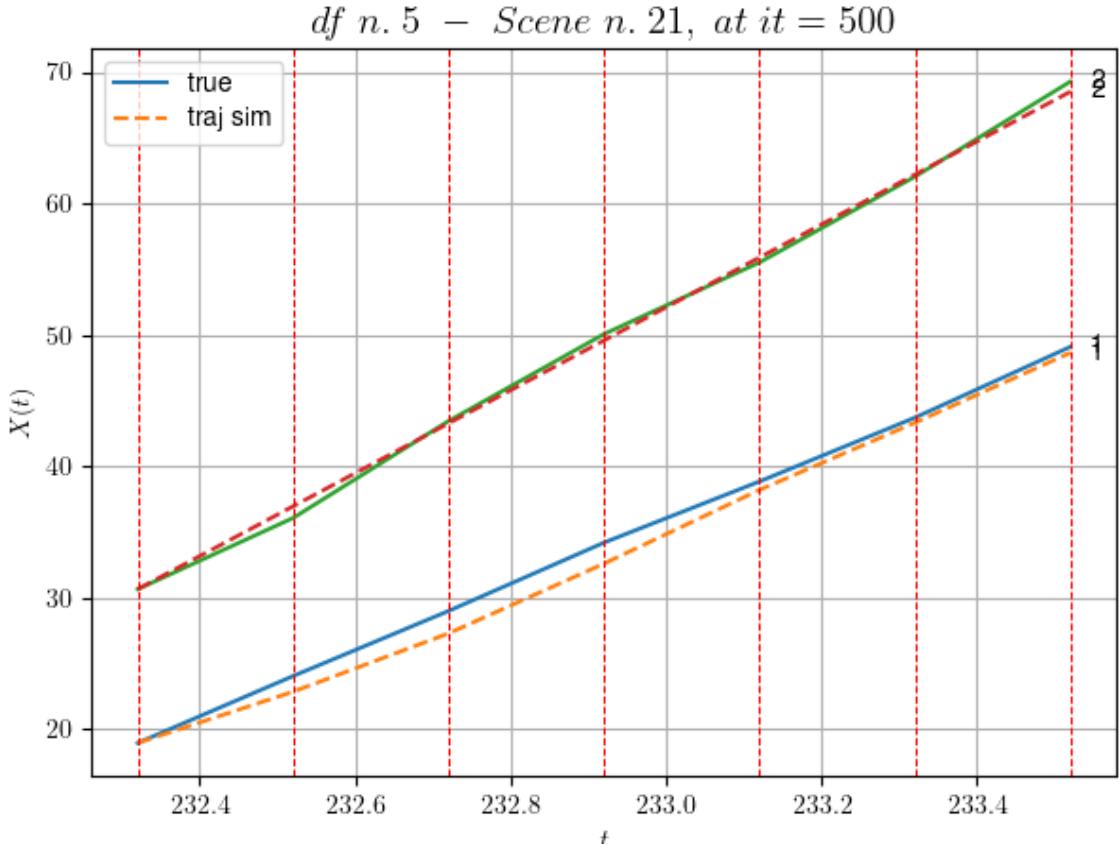

- Time interval n.4: [233.12, 233.32]
* y_true: [24.27088604]
* v_ann: [25.55451011657715, 31.537257787029347]
```

```


- Time interval n.5: [233.32, 233.52]
* y_true: [26.95109308]
* v_ann: [26.604877471923828, 31.537257787029347]
```

```


* err= 0.6755140008564993
* Learning rate NN = 0.00031381050939671695
* diff = 0.011995659345534593
```



For scene 21/66

- \* use LR\_NN=0.001 with err=1.4464051600209222 at it=24
- \* v0\_scn\_mean = 31.475767475560918
- \* MAE = 0.5014283835146334

---



---

df n.5, scene n.22/66

---



---

We have 5 time intervals inside [251.72, 252.72]

- Time interval n.0: [251.72, 251.92]
  - \* y\_true: [25.8902815]
  - \* v\_ann: [25.007587432861328, 28.911331954379982]

---

- Time interval n.1: [251.92, 252.12]
  - \* y\_true: [25.99043581]
  - \* v\_ann: [26.164443969726562, 28.911331954379982]

---

- Time interval n.2: [252.12, 252.32]
  - \* y\_true: [23.35052221]
  - \* v\_ann: [27.2823486328125, 28.911331954379982]

---

- Time interval n.3: [252.32, 252.52]
  - \* y\_true: [25.92077137]

```
* v_ann: [26.440946578979492, 28.911331954379982]
```

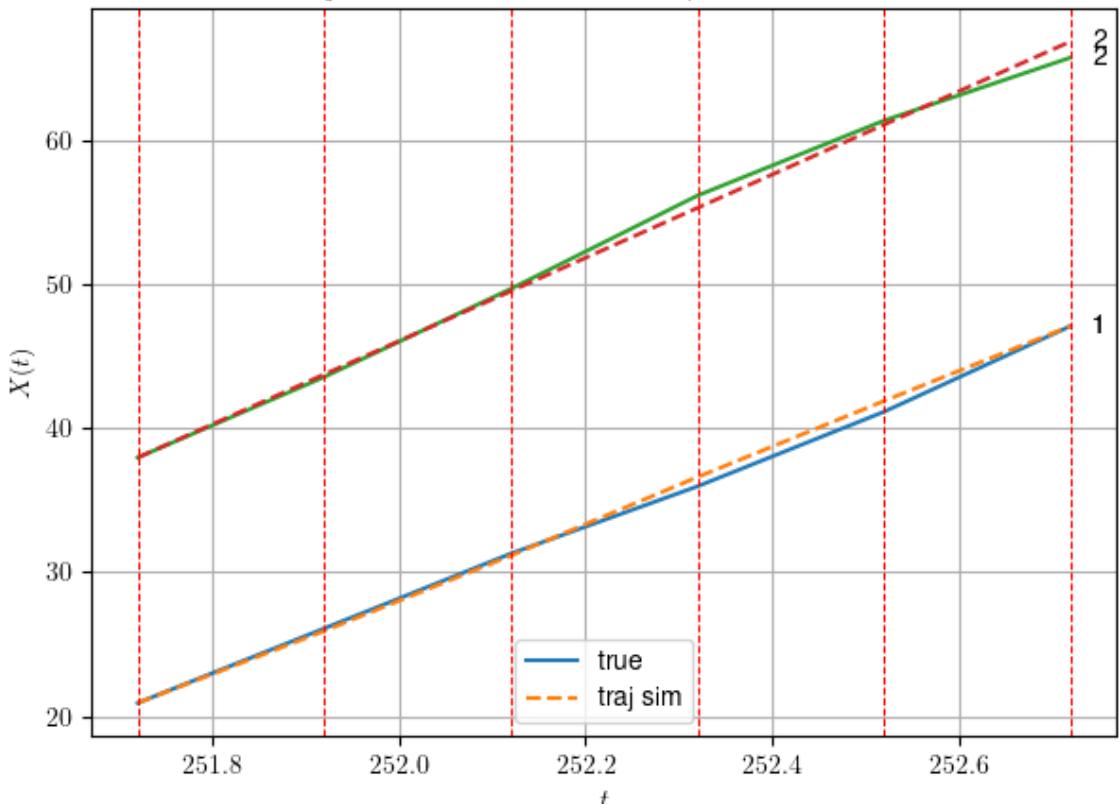
---

```
- Time interval n.4: [252.52, 252.72]
* y_true: [29.77614511]
* v_ann: [26.047149658203125, 28.911331954379982]
```

---

```
* err= 0.2626810587321835
* Learning rate NN = 0.0003874204121530056
* diff = 0.010725645287343821
```

*df n. 5 – Scene n. 22, at it = 500*



For scene 22/66

```
* use LR_NN=0.001 with err=0.5101474687192572 at it=24
* v0_scn_mean = 28.954878676196714
* MAE = 0.23663988165861433
```

---



---



---

df n.5, scene n.23/66

---



---



---

We have 6 time intervals inside [264.92, 266.12]

```
- Time interval n.0: [264.92, 265.12]
* y_true: [20.67034886]
* v_ann: [21.24179458618164, 29.366788374198215]
```

---



---



---

```
- Time interval n.1: [265.12, 265.32]
```

```
* y_true: [29.59071595]
* v_ann: [25.64259147644043, 29.366788374198215]
```

---

```
- Time interval n.2: [265.32, 265.52]
* y_true: [25.33086431]
* v_ann: [25.815847396850586, 29.366788374198215]
```

---

```
- Time interval n.3: [265.52, 265.72]
* y_true: [23.55087759]
* v_ann: [27.626462936401367, 29.366788374198215]
```

---

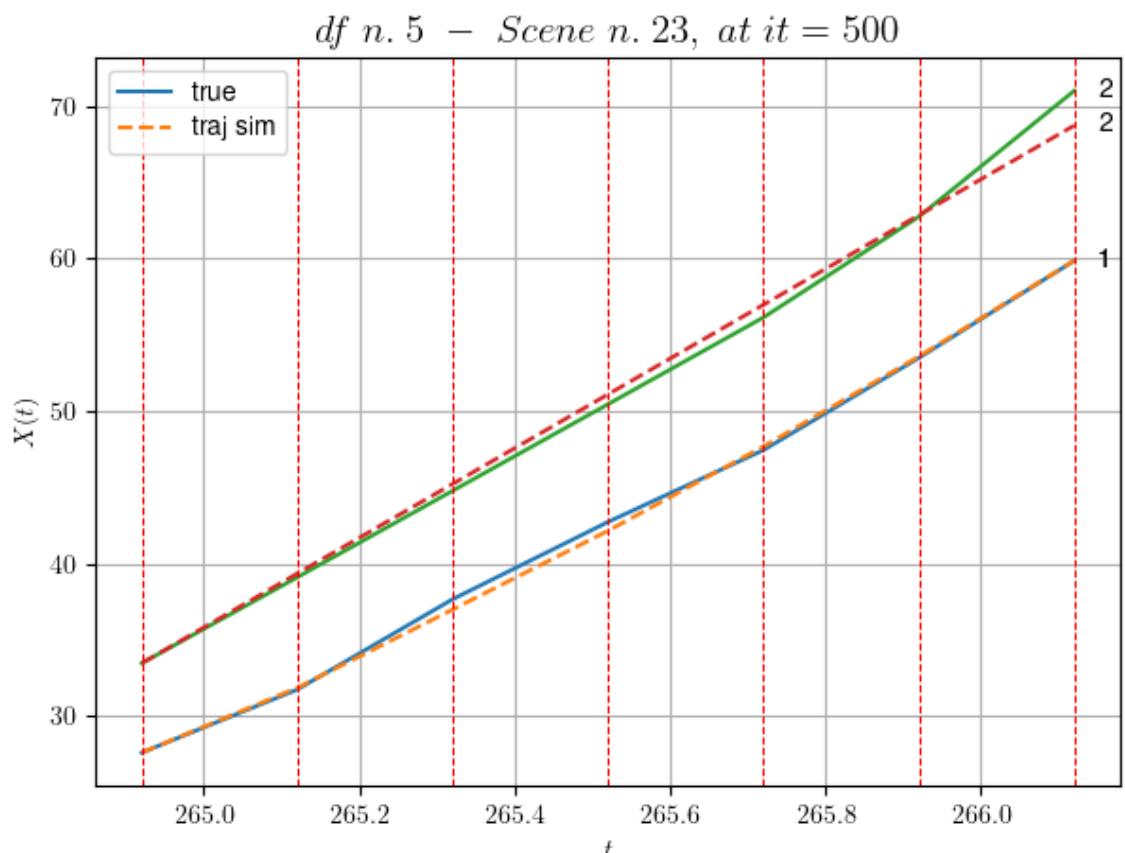
```
- Time interval n.4: [265.72, 265.92]
* y_true: [30.1916634]
* v_ann: [29.486352920532227, 29.366788374198215]
```

---

```
- Time interval n.5: [265.92, 266.12]
* y_true: [31.85185985]
* v_ann: [31.444677352905273, 29.366788374198215]
```

---

```
* err= 0.5308694694421829
* Learning rate NN = 0.00031381050939671695
* diff = 1.697023196023384e-05
```



For scene 23/66

```
* use LR_NN=0.001 with err=0.5543274038334126 at it=24
* v0_scn_mean = 29.392116839225707
* MAE = 0.5077909830614464
```

```
=====
```

df n.5, scene n.24/66

```
=====
```

```
We have 7 time intervals inside [274.12,275.52]
- Time interval n.0: [274.12, 274.32]
 * y_true: [30.95326479]
 * v_ann: [34.92689895629883, 29.831436253445958]
```

```
- Time interval n.1: [274.32, 274.52]
 * y_true: [30.29511913]
 * v_ann: [34.54866409301758, 29.831436253445958]
```

```
- Time interval n.2: [274.52, 274.72]
 * y_true: [32.34500727]
 * v_ann: [34.882667541503906, 29.831436253445958]
```

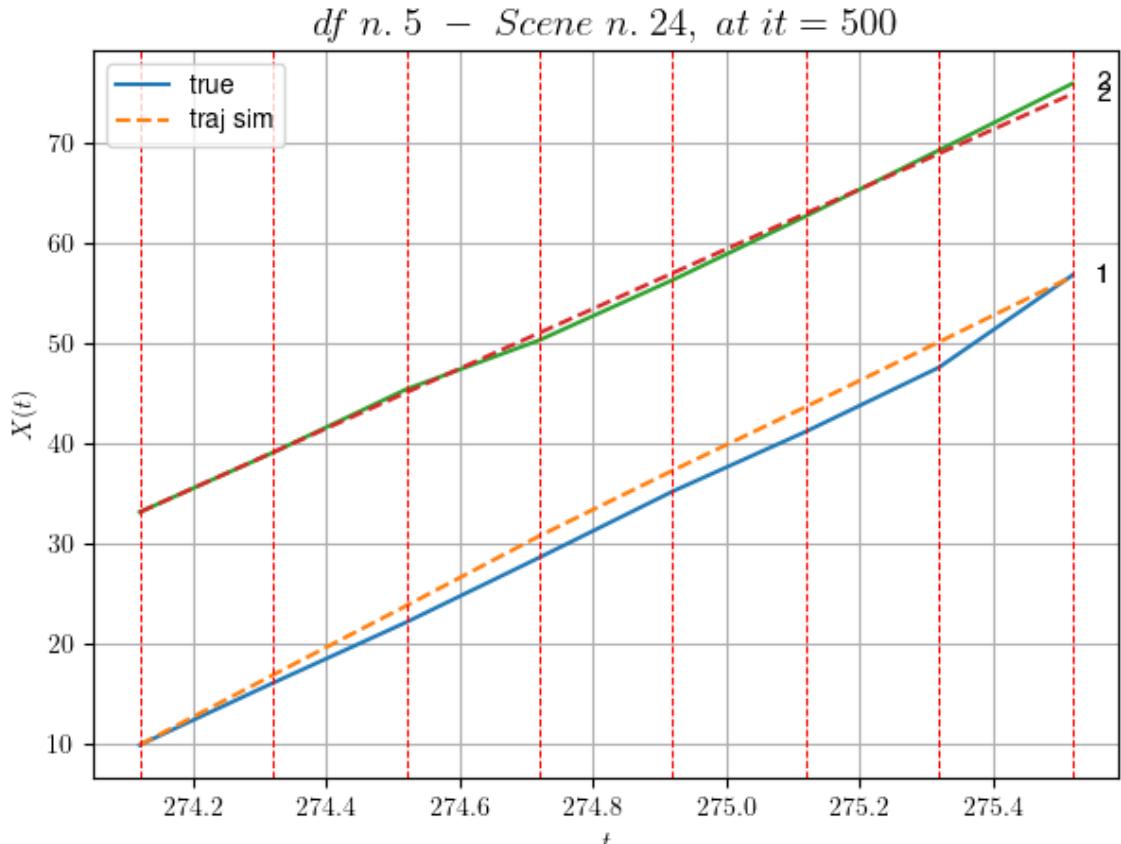
```
- Time interval n.3: [274.72, 274.92]
 * y_true: [32.99414577]
 * v_ann: [32.658172607421875, 29.831436253445958]
```

```
- Time interval n.4: [274.92, 275.12]
 * y_true: [29.86753537]
 * v_ann: [31.8251953125, 29.831436253445958]
```

```
- Time interval n.5: [275.12, 275.32]
 * y_true: [32.08306928]
 * v_ann: [32.378231048583984, 29.831436253445958]
```

```
- Time interval n.6: [275.32, 275.52]
 * y_true: [45.96365951]
 * v_ann: [32.622745513916016, 29.831436253445958]
```

```
* err= 1.7047726317567564
* Learning rate NN = 2.541864660088322e-06
* diff = 0.0010820095604924251
```



For scene 24/66

\* use LR\_NN=1e-05 with err=0.8271944922724196 at it=24  
\* v0\_scn\_mean = 29.838178803306626  
\* MAE = 1.7045264524862402

---

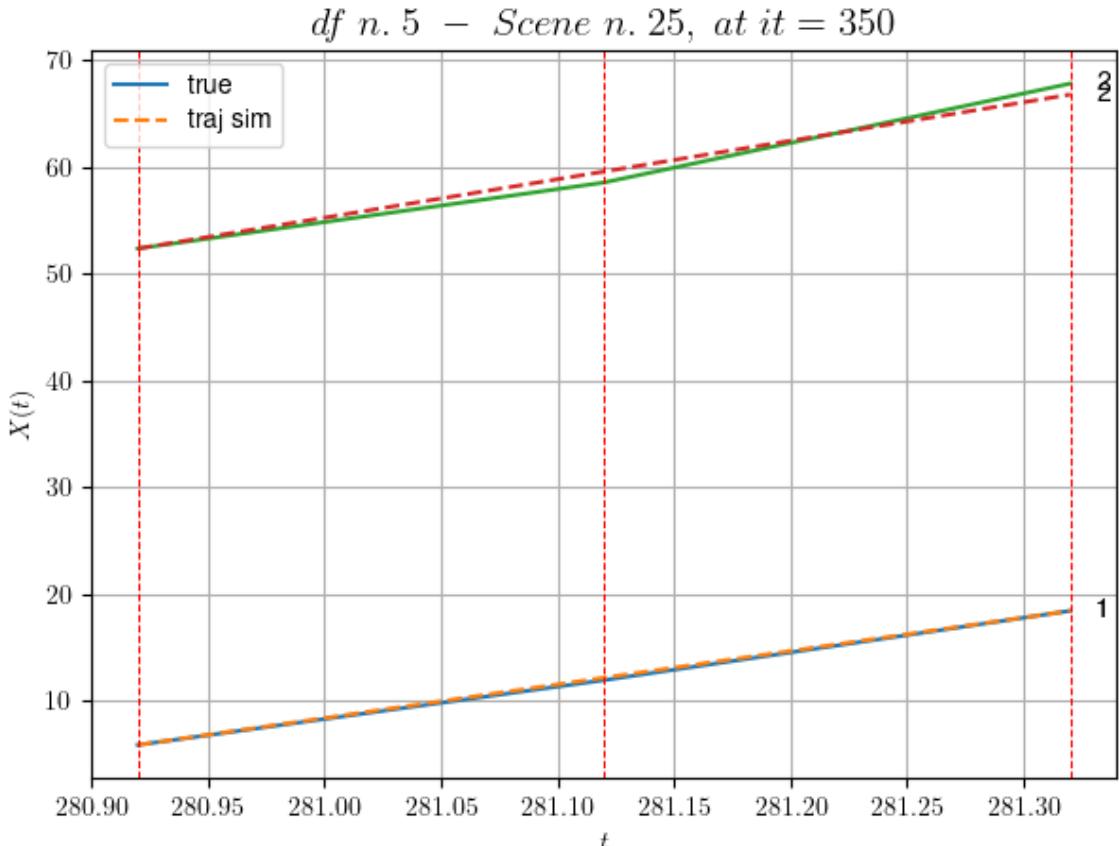
---

df n.5, scene n.25/66

---

---

We have 2 time intervals inside [280.92,281.32]  
\* err= 0.36132166454861575  
\* Learning rate NN = 4.049999552080408e-05  
\* diff = 1.674854964162087e-07



For scene 25/66

- \* use LR\_NN=5e-05 with err=1.9954695254885408 at it=24
  - \* v0\_scn\_mean = 35.70199582261284
  - \* MAE = 0.3613216280019668
- 
- 

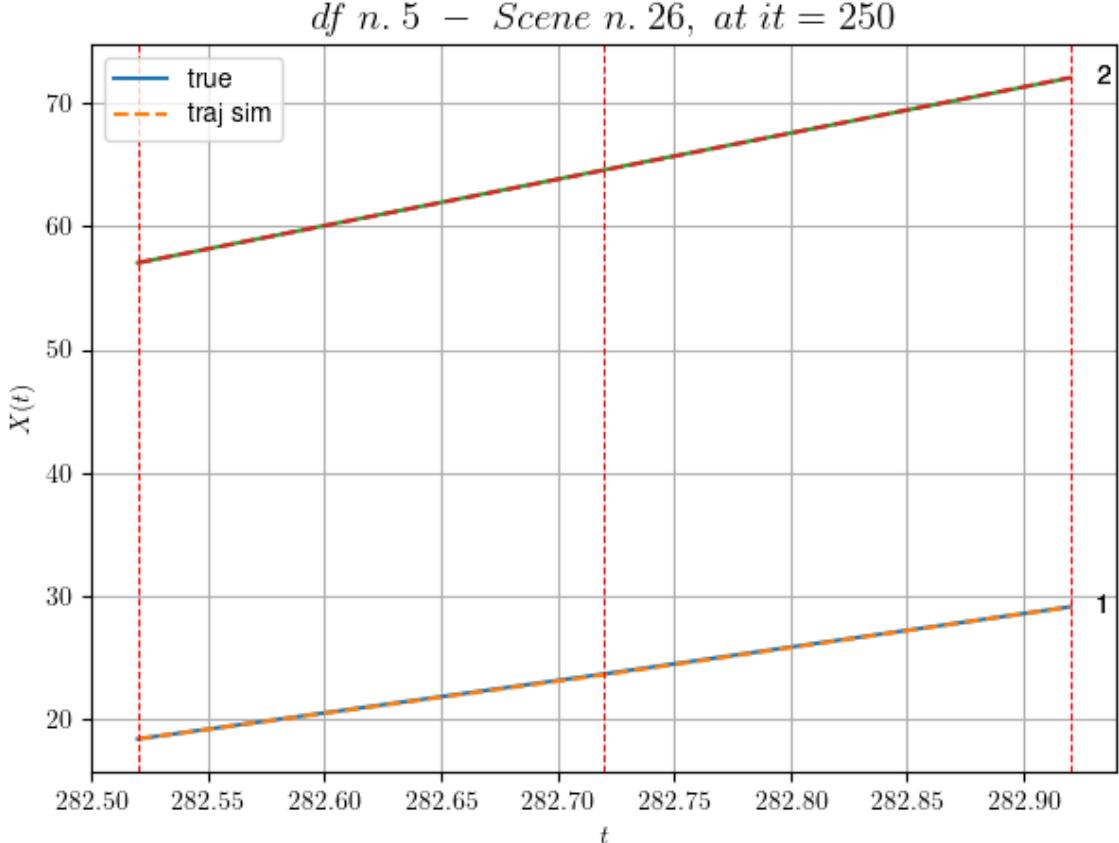
df n.5, scene n.26/66

---

---

We have 2 time intervals inside [282.52, 282.92]

- \* err= 0.0010412255814908442
- \* Learning rate NN = 4.499999704421498e-05
- \* diff = 4.0298415203789996e-07



For scene 26/66

- \* use LR\_NN=5e-05 with err=1.8832290581059083 at it=24
- \* v0\_scn\_mean = 36.937911750391635
- \* MAE = 0.00101008439215059

---



---

df n.5, scene n.27/66

---



---

We have 4 time intervals inside [293.52, 294.32]

- Time interval n.0: [293.52, 293.72]
  - \* y\_true: [23.33003468]
  - \* v\_ann: [24.533798217773438, 25.930527482373613]

---

- Time interval n.1: [293.72, 293.92]
  - \* y\_true: [22.90007936]
  - \* v\_ann: [24.652475357055664, 25.930527482373613]

---

- Time interval n.2: [293.92, 294.12]
  - \* y\_true: [25.24016113]
  - \* v\_ann: [24.275373458862305, 25.930527482373613]

---

- Time interval n.3: [294.12, 294.32]
  - \* y\_true: [26.6902751]

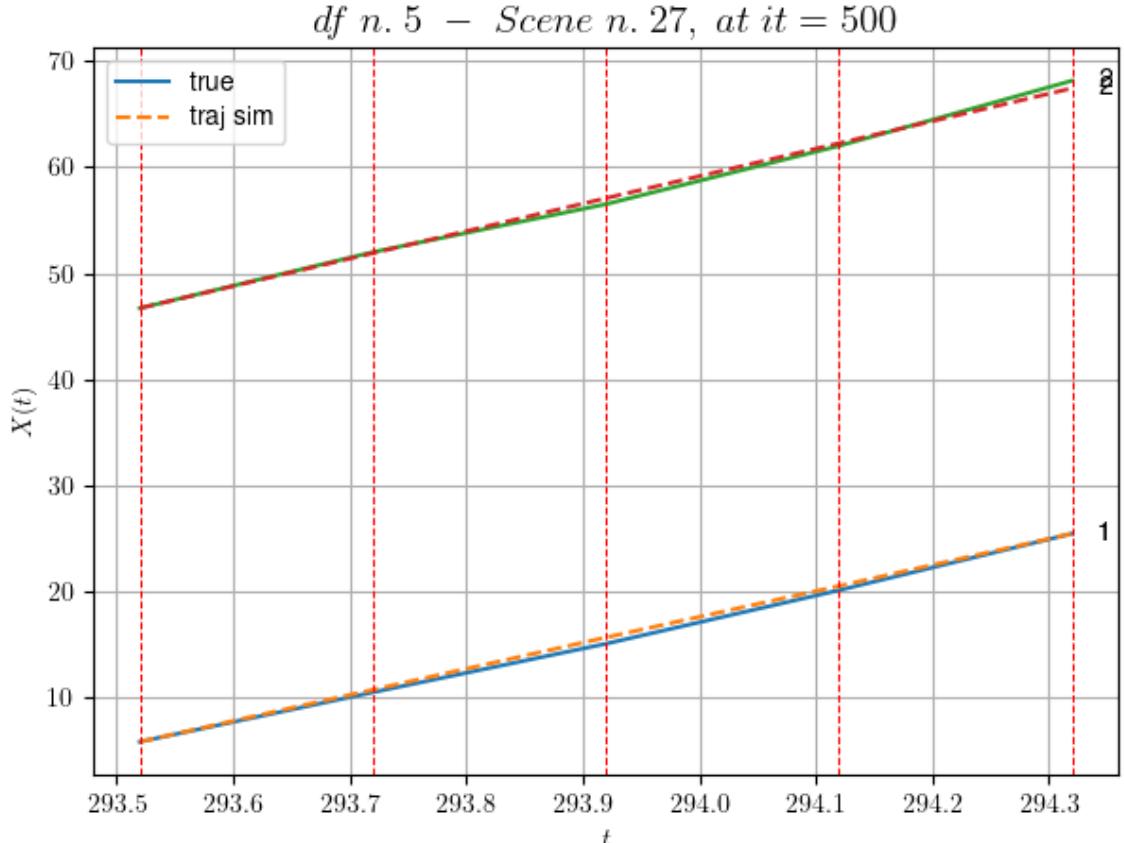
```
* v_ann: [24.714628219604492, 25.930527482373613]
```

---



---

```
* err= 0.14658826644087042
* Learning rate NN = 4.7829678806010634e-05
* diff = 5.220322274179789e-07
```



For scene 27/66

```
* use LR_NN=0.0001 with err=1.985191261292847 at it=24
* v0_scn_mean = 26.09330638304857
* MAE = 0.14576649390840002
```

---



---

df n.5, scene n.28/66

---



---



---



---

We have 4 time intervals inside [310.92, 311.72]

- Time interval n.0: [310.92, 311.12]
  - \* y\_true: [17.70013991]
  - \* v\_ann: [26.98078727722168, 24.67862475874489]

---

- Time interval n.1: [311.12, 311.32]
  - \* y\_true: [26.02442822]
  - \* v\_ann: [27.463871002197266, 24.67862475874489]

---

- Time interval n.2: [311.32, 311.52]

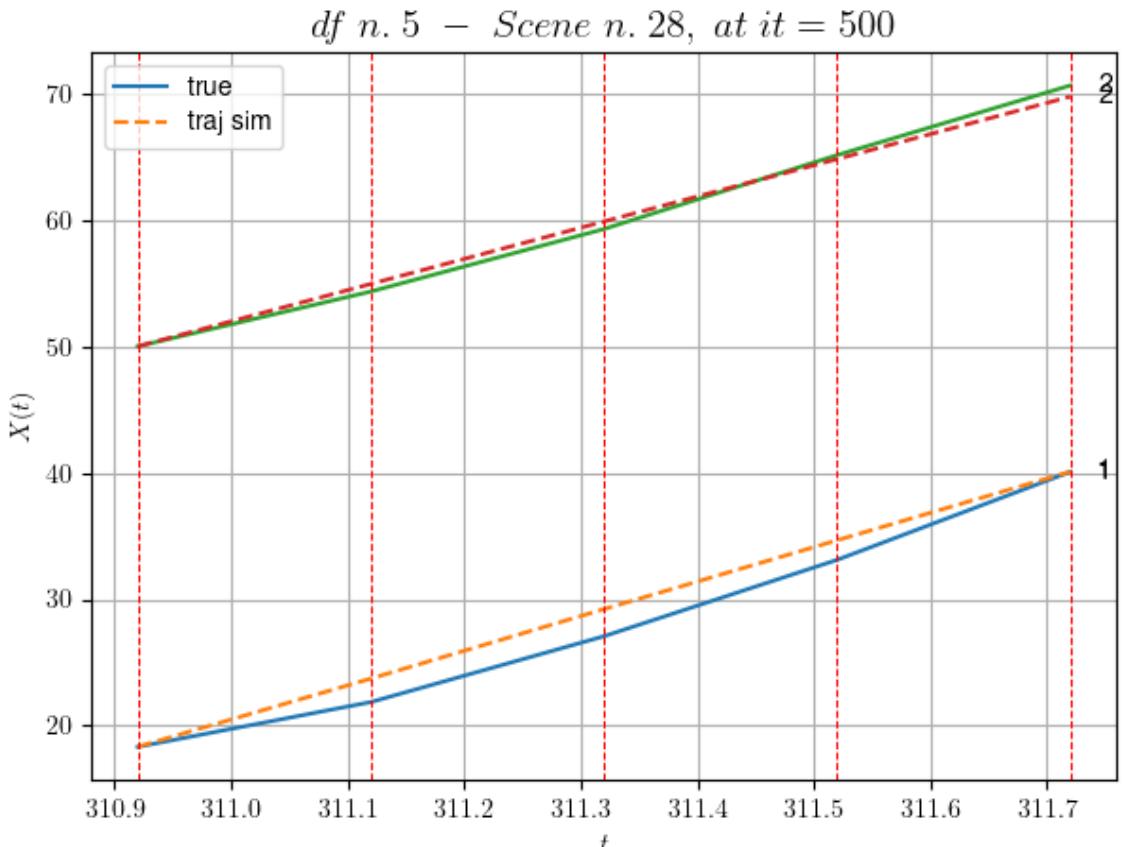
```
* y_true: [30.20053931]
* v_ann: [27.227291107177734, 24.67862475874489]
```

---

```
- Time interval n.3: [311.52, 311.72]
* y_true: [34.80091453]
* v_ann: [27.121742248535156, 24.67862475874489]
```

---

```
* err= 1.2039945674960906
* Learning rate NN = 4.782968062500004e-06
* diff = 0.0010119344024754895
```



For scene 28/66

```
* use LR_NN=1e-05 with err=4.140673000003035 at it=24
* v0_scn_mean = 24.891479768354547
* MAE = 1.1857364121853957
```

---



---

df n.5, scene n.29/66

---



---

We have 7 time intervals inside [326.52,327.92]

```
- Time interval n.0: [326.52, 326.72]
* y_true: [22.65024627]
* v_ann: [19.839496612548828, 25.910216862746474]
```

```
- Time interval n.1: [326.72, 326.92]
 * y_true: [25.27547244]
 * v_ann: [21.811391830444336, 25.910216862746474]

- Time interval n.2: [326.92, 327.12]
 * y_true: [25.27547244]
 * v_ann: [23.44959259033203, 25.910216862746474]

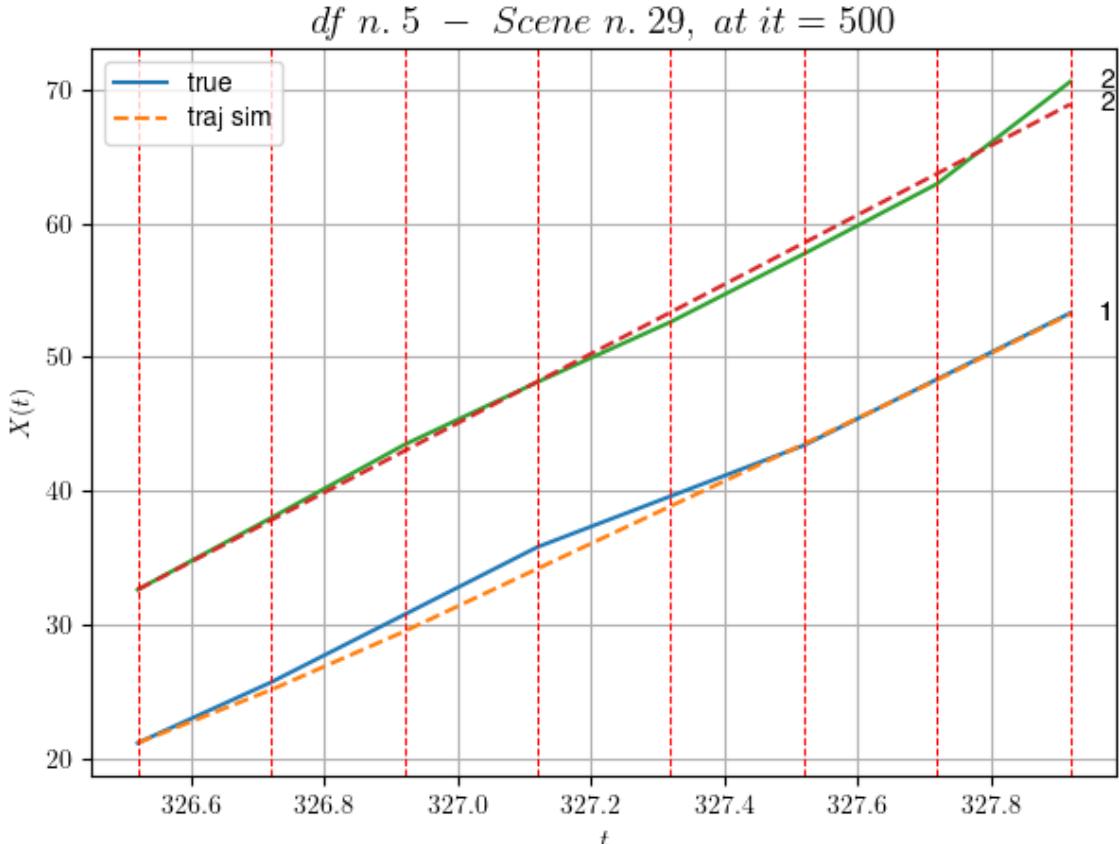
- Time interval n.3: [327.12, 327.32]
 * y_true: [19.00058247]
 * v_ann: [23.38408851623535, 25.910216862746474]

- Time interval n.4: [327.32, 327.52]
 * y_true: [19.00058247]
 * v_ann: [23.228805541992188, 25.910216862746474]

- Time interval n.5: [327.52, 327.72]
 * y_true: [24.72612637]
 * v_ann: [23.88892364501953, 25.910216862746474]

- Time interval n.6: [327.72, 327.92]
 * y_true: [24.72612637]
 * v_ann: [24.625873565673828, 25.910216862746474]

* err= 0.6233187511592919
* Learning rate NN = 0.00025418648147024214
* diff = 0.010879641376962512
```



For scene 29/66

- \* use LR\_NN=0.001 with err=6.19398968869537 at it=24
- \* v0\_scn\_mean = 26.073808188205387
- \* MAE = 0.4488613685806649

---



---

df n.5, scene n.30/66

---



---

We have 6 time intervals inside [329.32, 330.52]

- Time interval n.0: [329.32, 329.52]
  - \* y\_true: [25.42011368]
  - \* v\_ann: [25.501056671142578, 27.451840051353496]

---

- Time interval n.1: [329.52, 329.72]
  - \* y\_true: [25.34019853]
  - \* v\_ann: [25.835968017578125, 27.451840051353496]

---

- Time interval n.2: [329.72, 329.92]
  - \* y\_true: [25.07030597]
  - \* v\_ann: [26.177532196044922, 27.451840051353496]

---

- Time interval n.3: [329.92, 330.12]
  - \* y\_true: [25.44044741]

\* v\_ann: [25.941444396972656, 27.451840051353496]

---

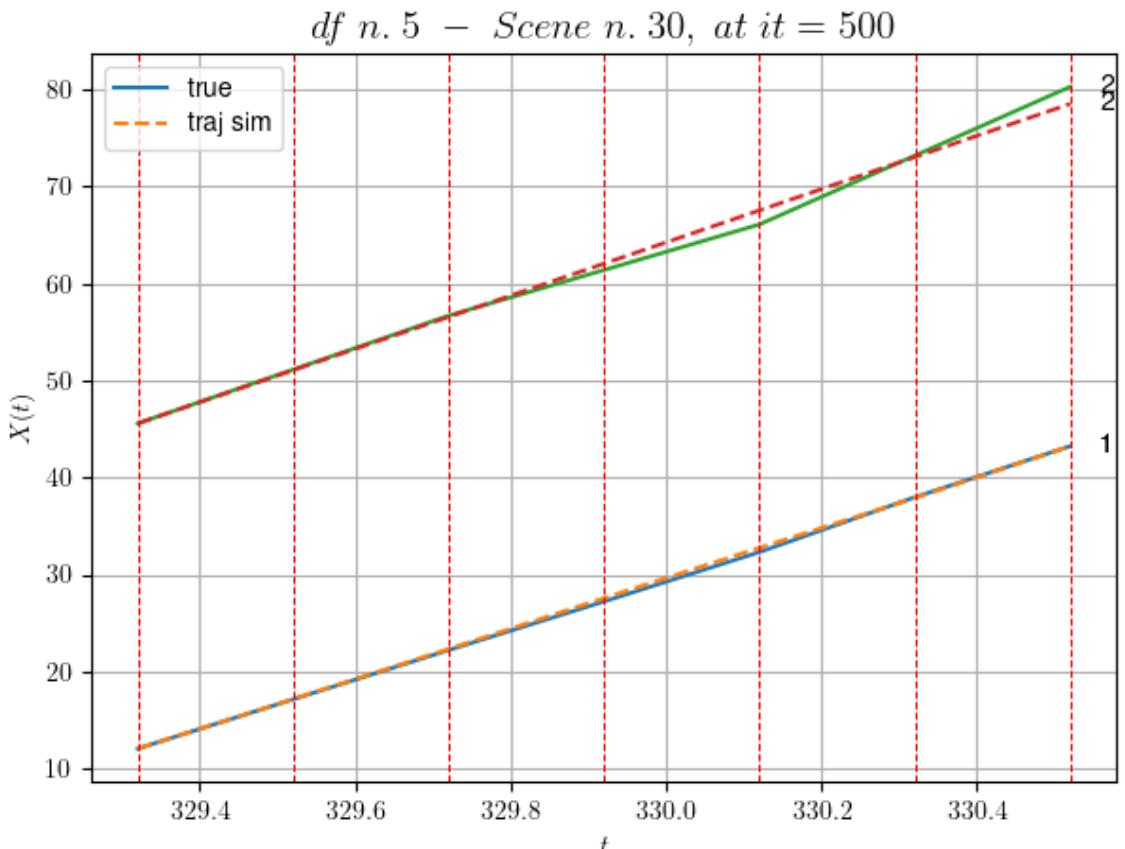
- Time interval n.4: [330.12, 330.32]  
 \* y\_true: [28.28069592]  
 \* v\_ann: [25.659772872924805, 27.451840051353496]

---

- Time interval n.5: [330.32, 330.52]  
 \* y\_true: [26.32589786]  
 \* v\_ann: [26.71467399597168, 27.451840051353496]

---

\* err= 0.4292286018728186  
 \* Learning rate NN = 3.138104830213706e-06  
 \* diff = 2.4647364095742308e-05



For scene 30/66

\* use LR\_NN=1e-05 with err=1.8333411827145807 at it=24  
 \* v0\_scn\_mean = 27.553766449280086  
 \* MAE = 0.4179930575351986

---



---

df n.5, scene n.31/66

---



---

We have 7 time intervals inside [332.72,334.12]  
 - Time interval n.0: [332.72, 332.92]

```
* y_true: [22.26002506]
* v_ann: [21.075183868408203, 28.714685816755356]

- Time interval n.1: [332.92, 333.12]
* y_true: [20.96005999]
* v_ann: [22.250694274902344, 28.714685816755356]

- Time interval n.2: [333.12, 333.32]
* y_true: [26.61015211]
* v_ann: [22.798303604125977, 28.714685816755356]

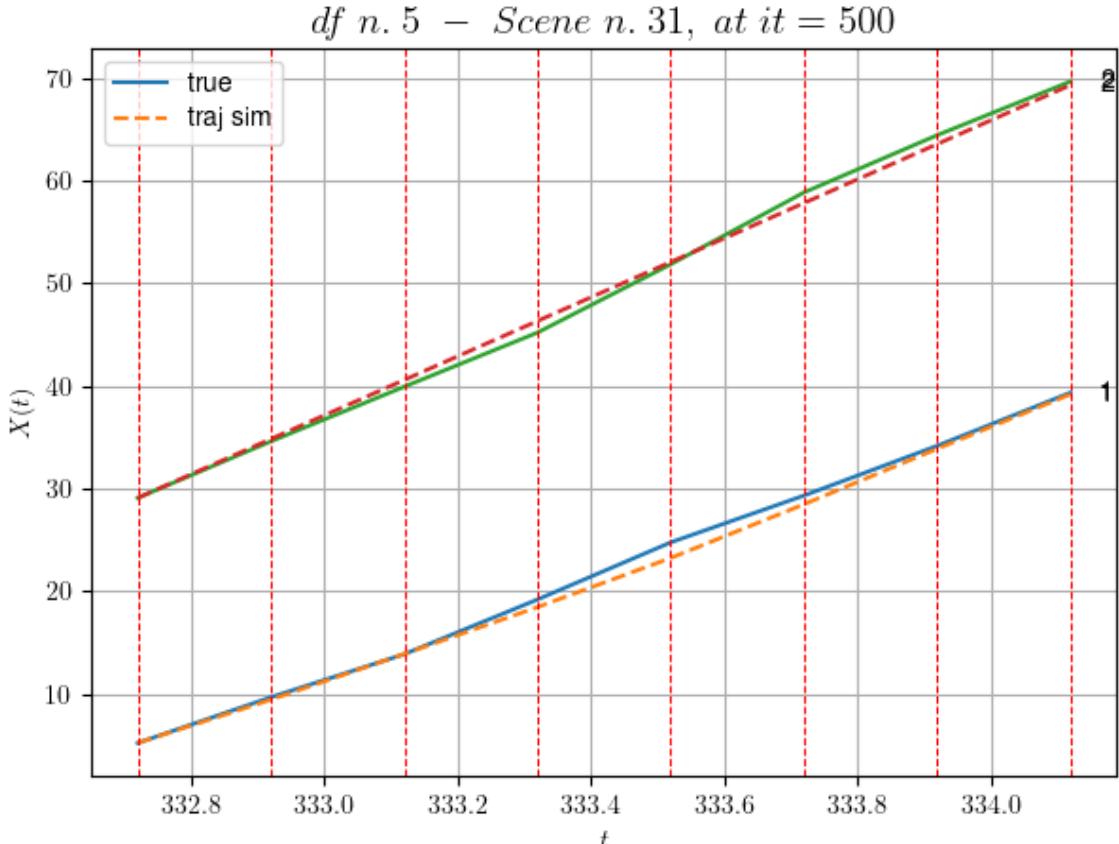
- Time interval n.3: [333.32, 333.52]
* y_true: [27.82025187]
* v_ann: [23.922714233398438, 28.714685816755356]

- Time interval n.4: [333.52, 333.72]
* y_true: [22.80035432]
* v_ann: [26.15020751953125, 28.714685816755356]

- Time interval n.5: [333.72, 333.92]
* y_true: [24.22548579]
* v_ann: [27.039478302001953, 28.714685816755356]

- Time interval n.6: [333.92, 334.12]
* y_true: [25.88569112]
* v_ann: [26.50750160217285, 28.714685816755356]

* err= 0.4685784573027375
* Learning rate NN = 0.00012709324073512107
* diff = 0.0033906433152238735
```



For scene 31/66

- \* use LR\_NN=0.0005 with err=0.711005561521066 at it=24
- \* v0\_scn\_mean = 28.766098384075104
- \* MAE = 0.3255321874269542

---



---

df n.5, scene n.32/66

---



---

We have 9 time intervals inside [337.72, 339.52]

- Time interval n.0: [337.72, 337.92]
  - \* y\_true: [19.16015277]
  - \* v\_ann: [21.887649536132812, 27.020038219089475]

---

- Time interval n.1: [337.92, 338.12]
  - \* y\_true: [22.83026231]
  - \* v\_ann: [21.439910888671875, 27.020038219089475]

---

- Time interval n.2: [338.12, 338.32]
  - \* y\_true: [24.09038948]
  - \* v\_ann: [21.516693115234375, 27.020038219089475]

---

- Time interval n.3: [338.32, 338.52]
  - \* y\_true: [21.72046205]

```
* v_ann: [21.835594177246094, 27.020038219089475]
```

```
- Time interval n.4: [338.52, 338.72]
* y_true: [20.44060351]
* v_ann: [21.728046417236328, 27.020038219089475]
```

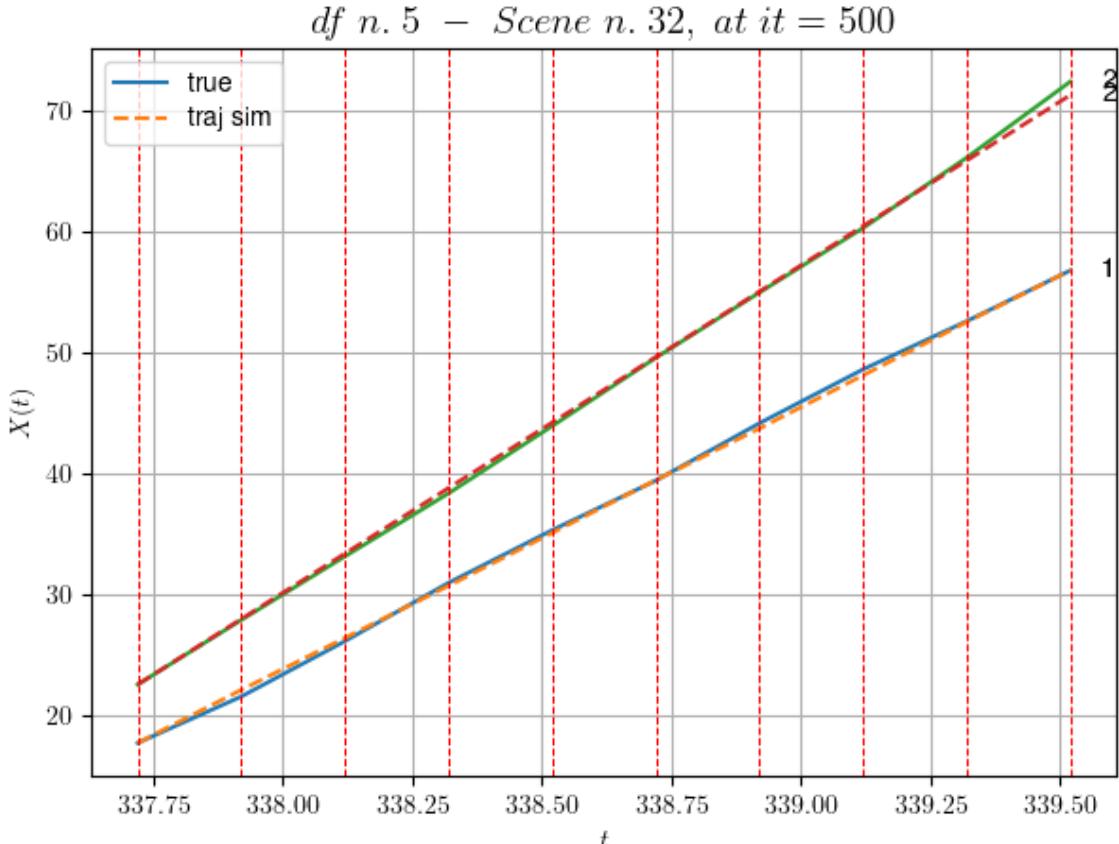
```
- Time interval n.5: [338.72, 338.92]
* y_true: [23.65082523]
* v_ann: [21.339031219482422, 27.020038219089475]
```

```
- Time interval n.6: [338.92, 339.12]
* y_true: [22.23087004]
* v_ann: [21.90897560119629, 27.020038219089475]
```

```
- Time interval n.7: [339.12, 339.32]
* y_true: [19.88098798]
* v_ann: [21.98798370361328, 27.020038219089475]
```

```
- Time interval n.8: [339.32, 339.52]
* y_true: [20.92126982]
* v_ann: [21.243703842163086, 27.020038219089475]
```

```
* err= 0.12903119985284123
* Learning rate NN = 0.00016677174426149577
* diff = 0.000624563304854886
```



For scene 32/66

- \* use LR\_NN=0.001 with err=10.98109914281741 at it=24
- \* v0\_scn\_mean = 27.13923669030152
- \* MAE = 0.12877164306375966

---



---

df n.5, scene n.33/66

---



---

We have 5 time intervals inside [351.12, 352.12]

- Time interval n.0: [351.12, 351.32]
  - \* y\_true: [28.23466241]
  - \* v\_ann: [31.975229263305664, 25.826379459699908]

---

- Time interval n.1: [351.32, 351.52]
  - \* y\_true: [30.795855]
  - \* v\_ann: [31.239425659179688, 25.826379459699908]

---

- Time interval n.2: [351.52, 351.72]
  - \* y\_true: [31.57624735]
  - \* v\_ann: [30.906314849853516, 25.826379459699908]

---

- Time interval n.3: [351.72, 351.92]
  - \* y\_true: [31.89643046]

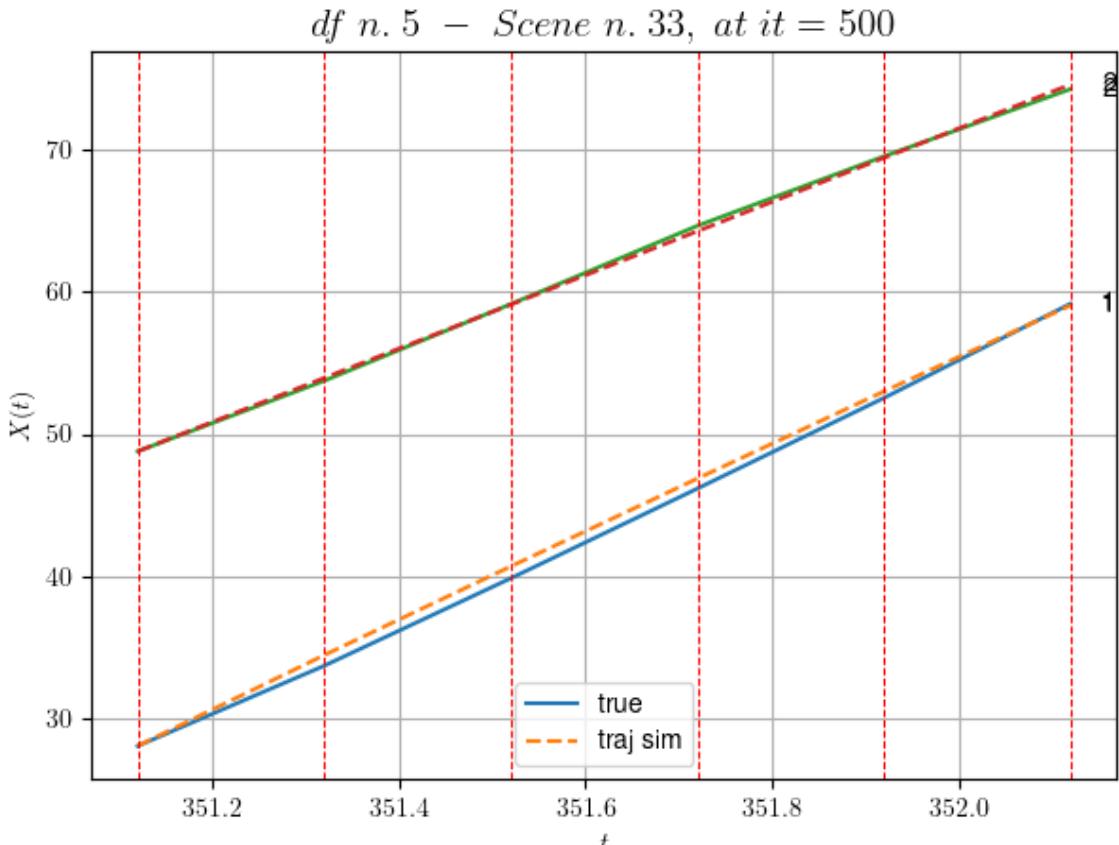
```
* v_ann: [30.68682861328125, 25.826379459699908]
```

---

```
- Time interval n.4: [351.92, 352.12]
* y_true: [33.17716293]
* v_ann: [30.26835060119629, 25.826379459699908]
```

---

```
* err= 0.19029501610530136
* Learning rate NN = 1.9371018424862996e-05
* diff = 0.002798323354711335
```



For scene 33/66

```
* use LR_NN=5e-05 with err=3.7490097936564926 at it=24
* v0_scn_mean = 25.99332428128024
* MAE = 0.19029501610530136
```

---



---

df n.5, scene n.34/66

---



---

We have 5 time intervals inside [366.32, 367.32]

```
- Time interval n.0: [366.32, 366.52]
* y_true: [28.47073202]
* v_ann: [29.67618179321289, 18.71437124531858]
```

---

```
- Time interval n.1: [366.52, 366.72]
```

```
* y_true: [27.15097361]
* v_ann: [29.06447410583496, 18.71437124531858]
```

---

```
- Time interval n.2: [366.72, 366.92]
* y_true: [27.85613216]
* v_ann: [28.413314819335938, 18.71437124531858]
```

---

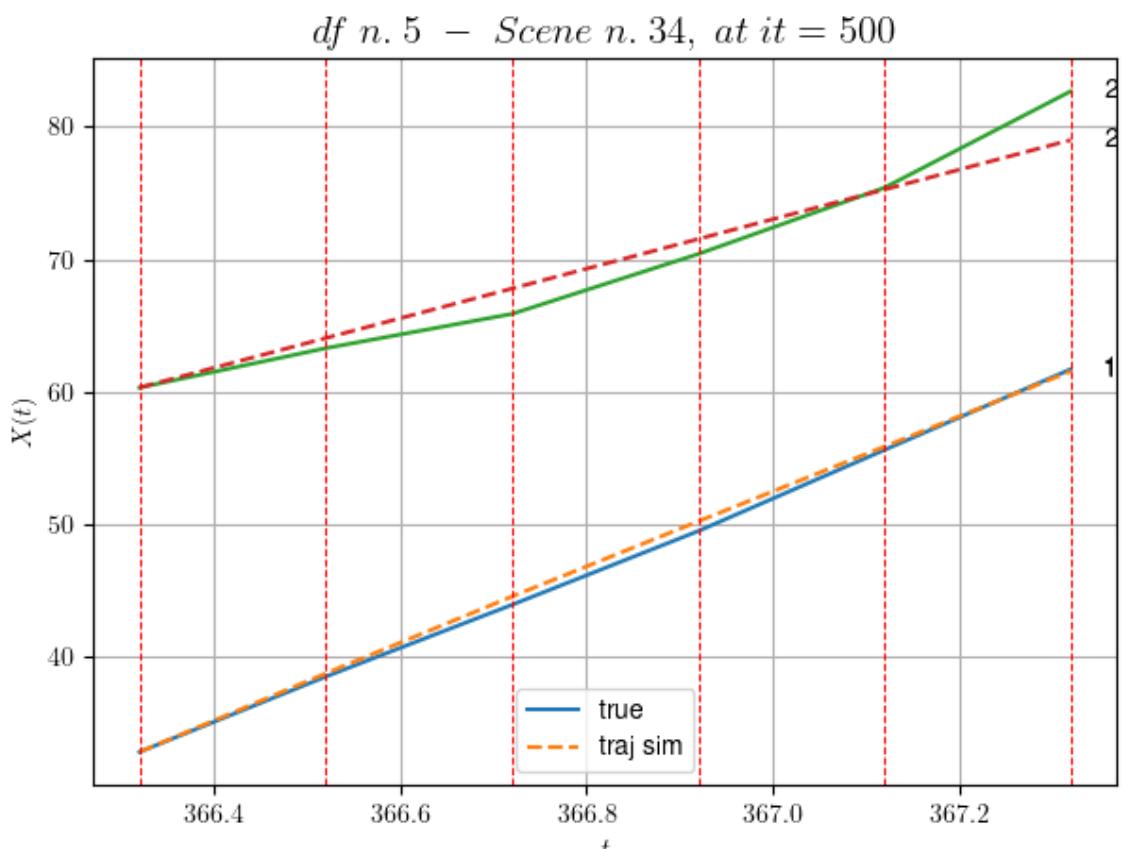
```
- Time interval n.3: [366.92, 367.12]
* y_true: [30.67676634]
* v_ann: [28.235042572021484, 18.71437124531858]
```

---

```
- Time interval n.4: [367.12, 367.32]
* y_true: [30.49192289]
* v_ann: [28.48458480834961, 18.71437124531858]
```

---

```
* err= 1.6827448170688633
* Learning rate NN = 1.9371018424862996e-05
* diff = 0.003588380520754164
```



For scene 34/66

```
* use LR_NN=5e-05 with err=21.554570025865843 at it=24
* v0_scn_mean = 19.165796395419285
* MAE = 1.570957163514045
```

```
df n.5, scene n.35/66
```

---



---

We have 3 time intervals inside [368.32, 368.92]

- Time interval n.0: [368.32, 368.52]

- \* y\_true: [29.25098599]

- \* v\_ann: [27.9106388092041, 29.298139298125175]

---

- Time interval n.1: [368.52, 368.72]

- \* y\_true: [30.10132187]

- \* v\_ann: [28.06610870361328, 29.298139298125175]

---

- Time interval n.2: [368.72, 368.92]

- \* y\_true: [25.10150522]

- \* v\_ann: [28.428937911987305, 29.298139298125175]

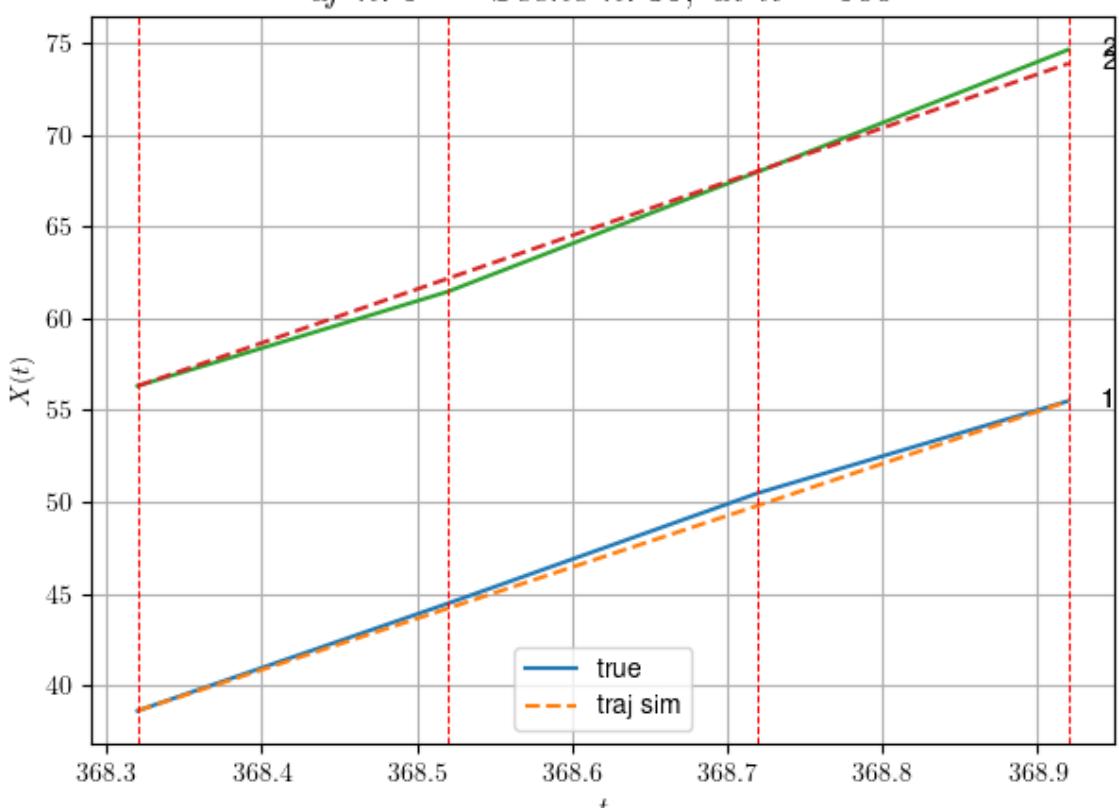
---

- \* err= 0.20186539676109033

- \* Learning rate NN = 2.952449540316593e-05

- \* diff = 4.623466168252044e-08

*df n. 5 – Scene n. 35, at it = 500*



For scene 35/66

- \* use LR\_NN=5e-05 with err=0.18437171432337862 at it=24

- \* v0\_scn\_mean = 29.32621372619567

- \* MAE = 0.16151151892527604

---

---



---



---

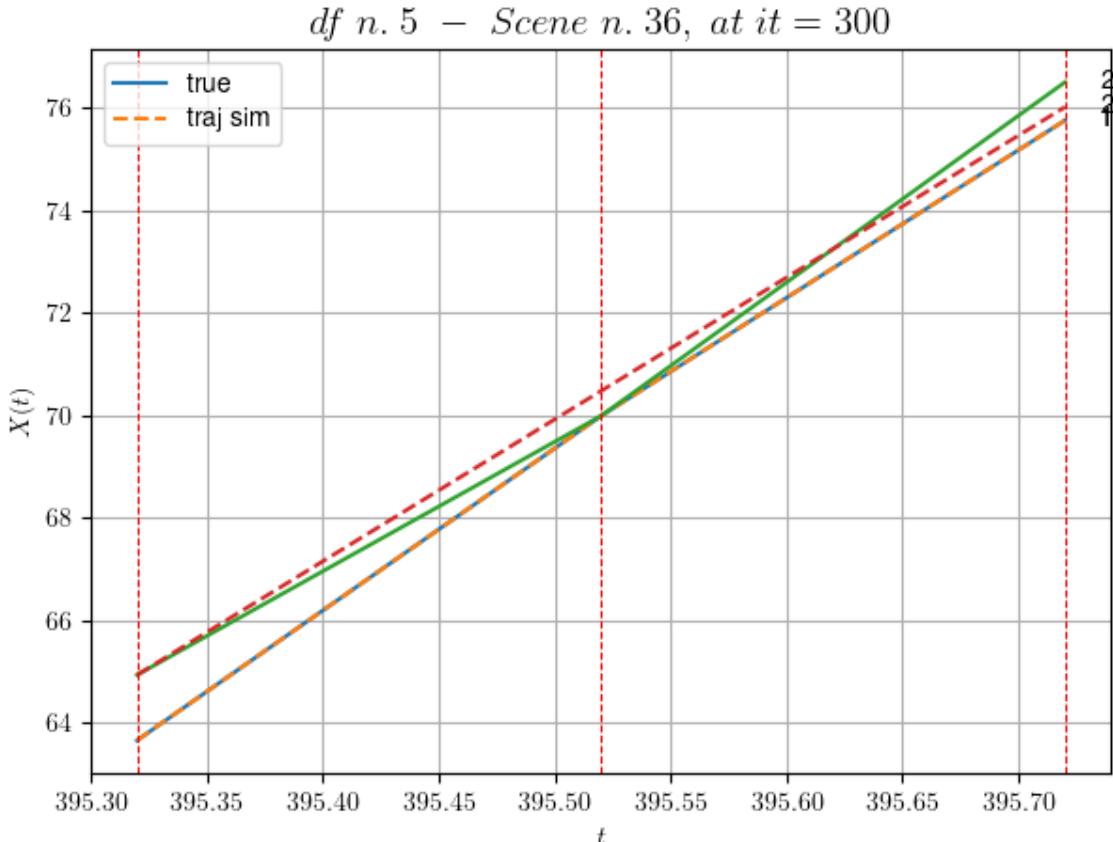
df n.5, scene n.36/66

---



---

We have 2 time intervals inside [395.32,395.72]  
 \* err= 0.07854192509029534  
 \* Learning rate NN = 0.008099999278783798  
 \* diff = 1.845495048308221e-07



For scene 36/66

- \* use LR\_NN=0.01 with err=0.18054046692873355 at it=24
- \* v0\_scn\_mean = 27.852599026759222
- \* MAE = 0.0706902923536536

---



---



---



---

df n.5, scene n.37/66

---



---

We have 2 time intervals inside [396.92,397.32]

- Time interval n.0: [396.92, 397.12]
  - \* y\_true: [34.6610239]
  - \* v\_ann: [37.96104049682617, 28.239105392623504]

---



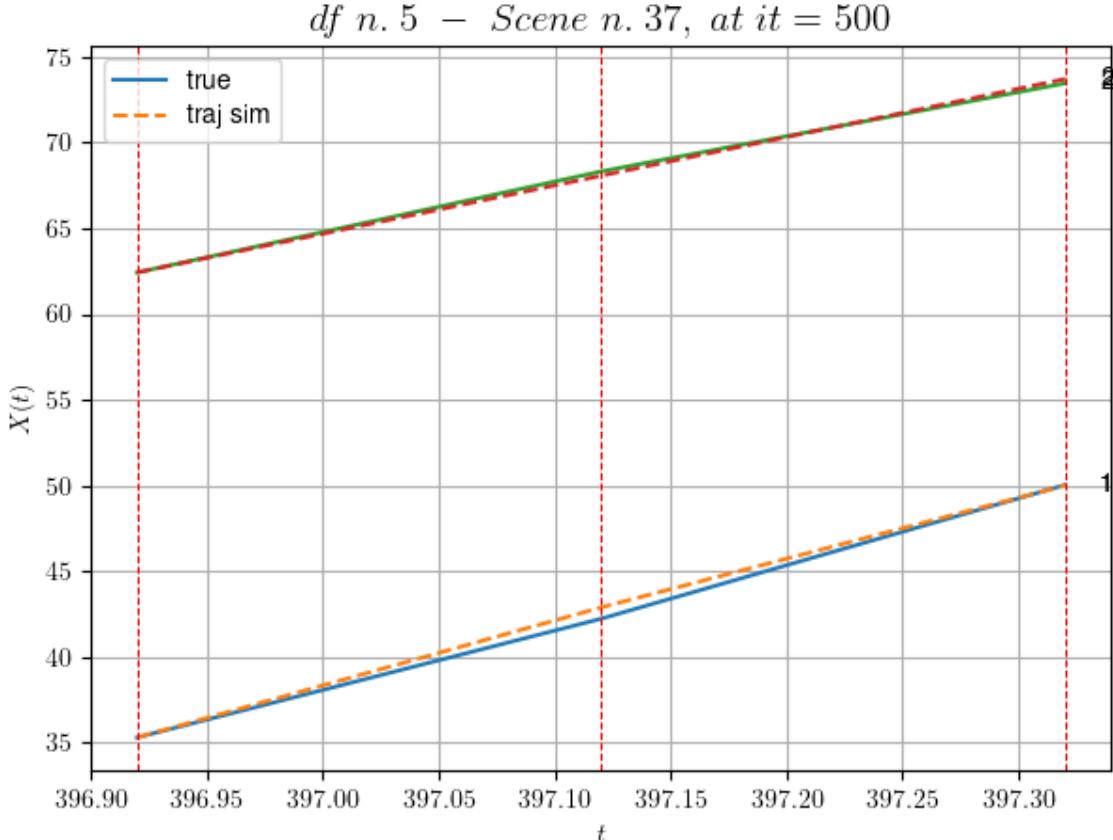
---

- Time interval n.1: [397.12, 397.32]
  - \* y\_true: [39.0616778]
  - \* v\_ann: [35.591285705566406, 28.239105392623504]

```

* err= 0.09373779159558591
* Learning rate NN = 7.289998757187277e-05
* diff = 3.877795748601087e-05

```



For scene 37/66

```

* use LR_NN=0.0001 with err=0.2448950795297355 at it=24
* v0_scn_mean = 28.309541176905867
* MAE = 0.09165973476076629

```

---



---

df n.5, scene n.38/66

---



---

We have 3 time intervals inside [407.92, 408.52]

- Time interval n.0: [407.92, 408.12]
  - \* y\_true: [29.86072395]
  - \* v\_ann: [33.102561950683594, 28.45068736212417]

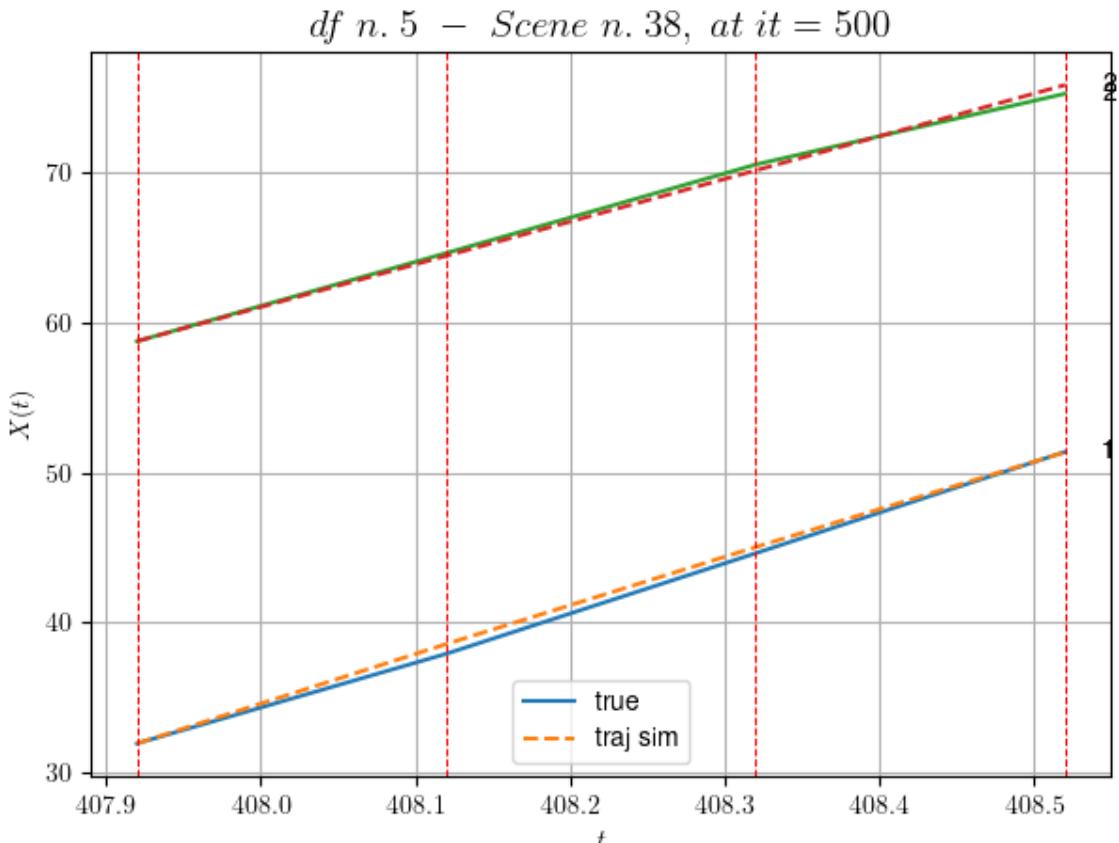
---

- Time interval n.1: [408.12, 408.32]
  - \* y\_true: [33.47113639]
  - \* v\_ann: [32.278011322021484, 28.45068736212417]

---

- Time interval n.2: [408.32, 408.52]
  - \* y\_true: [33.77149839]
  - \* v\_ann: [31.624305725097656, 28.45068736212417]

```
* err= 0.1389948020502302
* Learning rate NN = 5.904899080633186e-05
* diff = 9.491063116512377e-06
```



For scene 38/66

```
* use LR_NN=0.0001 with err=0.3772156409298525 at it=24
* v0_scn_mean = 28.512659867626688
* MAE = 0.13714822327522547
```

---



---

df n.5, scene n.39/66

---



---

We have 5 time intervals inside [415.32, 416.32]

- Time interval n.0: [415.32, 415.52]
  - \* y\_true: [24.30099057]
  - \* v\_ann: [22.780790328979492, 27.188395316740635]

- Time interval n.1: [415.52, 415.72]
  - \* y\_true: [3.42217247]
  - \* v\_ann: [3.8133912086486816, 27.188395316740635]

- Time interval n.2: [415.72, 415.92]
  - \* y\_true: [36.97197175]

\* v\_ann: [32.74418258666992, 27.188395316740635]

---

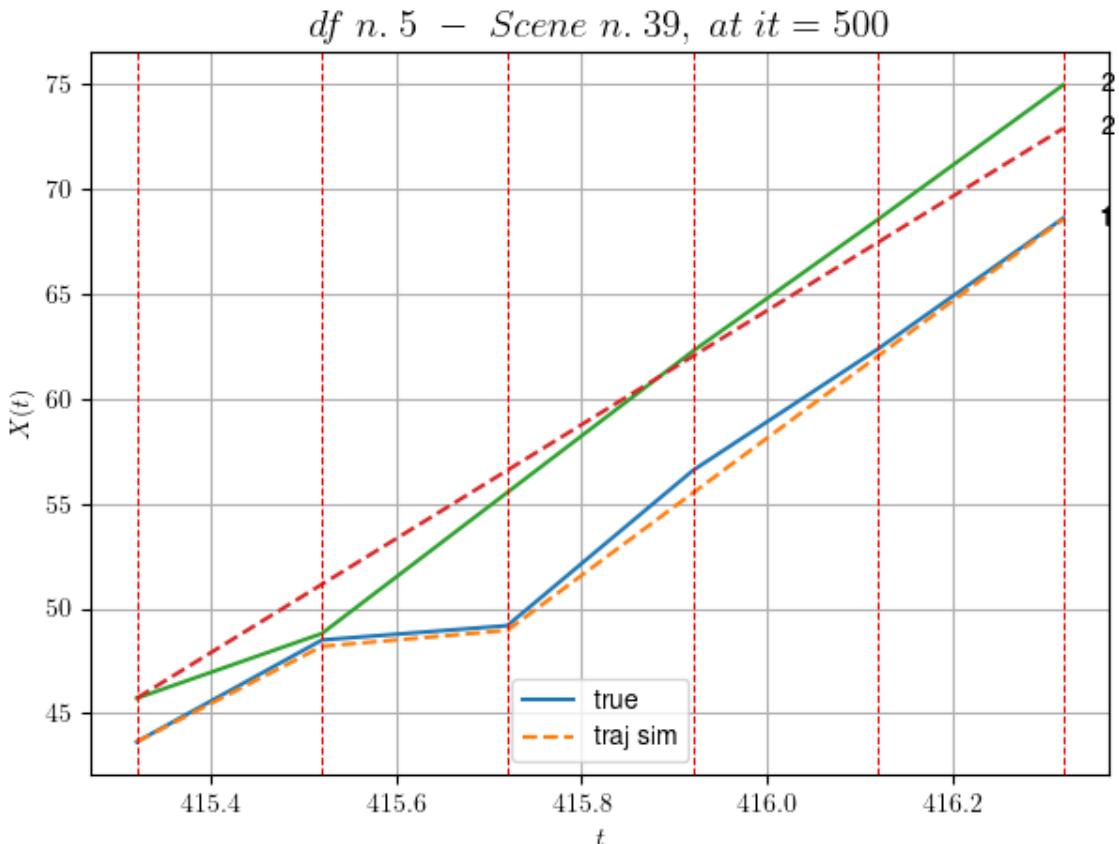
- Time interval n.3: [415.92, 416.12]
  - \* y\_true: [29.03190442]
  - \* v\_ann: [32.69344711303711, 27.188395316740635]

---

- Time interval n.4: [416.12, 416.32]
  - \* y\_true: [31.20253879]
  - \* v\_ann: [32.63747024536133, 27.188395316740635]

---

- \* err= 1.1315915778720982
- \* Learning rate NN = 0.0003874204121530056
- \* diff = 0.008371328554292568



For scene 39/66

- \* use LR\_NN=0.001 with err=3.799070364407057 at it=24
- \* v0\_scn\_mean = 27.30085950405015
- \* MAE = 1.0511665436666793

---



---

df n.5, scene n.40/66

---



---

We have 3 time intervals inside [431.32,431.92]  
 - Time interval n.0: [431.32, 431.52]

```
* y_true: [22.38028712]
* v_ann: [27.73473358154297, 26.589514796788606]
```

---

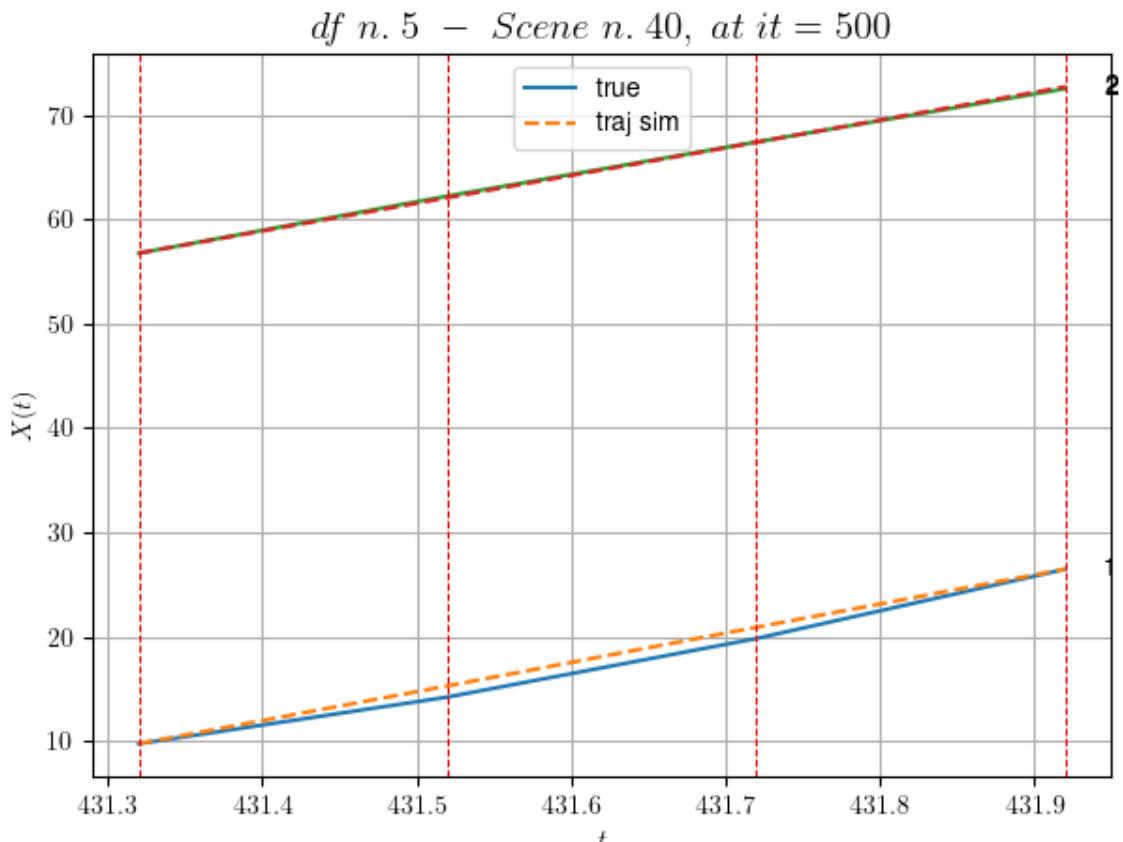
```
- Time interval n.1: [431.52, 431.72]
* y_true: [28.04016416]
* v_ann: [28.099590301513672, 26.589514796788606]
```

---

```
- Time interval n.2: [431.72, 431.92]
* y_true: [33.23035789]
* v_ann: [27.864730834960938, 26.589514796788606]
```

---

```
* err= 0.2976812131987294
* Learning rate NN = 5.9048988987342454e-06
* diff = 3.2810824579621034e-05
```



For scene 40/66

```
* use LR_NN=1e-05 with err=1.0828897689593397 at it=24
* v0_scn_mean = 26.72593420489127
* MAE = 0.2965853065531014
```

---



---

df n.5, scene n.41/66

---



---



---



---

We have 8 time intervals inside [445.52,447.12]

```
- Time interval n.0: [445.52, 445.72]
 * y_true: [14.80016221]
 * v_ann: [17.120567321777344, 25.638698276002998]

- Time interval n.1: [445.72, 445.92]
 * y_true: [17.50024709]
 * v_ann: [17.13764190673828, 25.638698276002998]

- Time interval n.2: [445.92, 446.12]
 * y_true: [23.10043116]
 * v_ann: [17.42481803894043, 25.638698276002998]

- Time interval n.3: [446.12, 446.32]
 * y_true: [13.50031408]
 * v_ann: [17.741483688354492, 25.638698276002998]

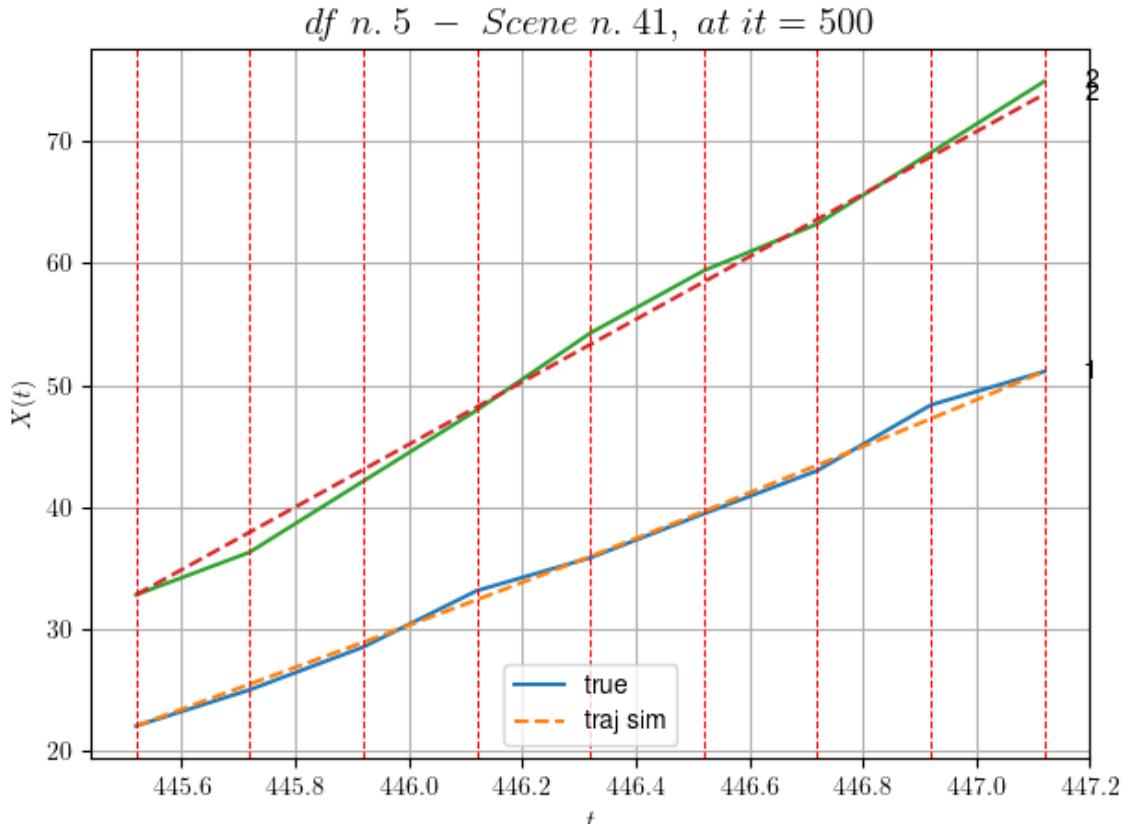
- Time interval n.4: [446.32, 446.52]
 * y_true: [18.05049958]
 * v_ann: [18.459148406982422, 25.638698276002998]

- Time interval n.5: [446.52, 446.72]
 * y_true: [17.6505843]
 * v_ann: [18.943683624267578, 25.638698276002998]

- Time interval n.6: [446.72, 446.92]
 * y_true: [26.90109206]
 * v_ann: [19.01578140258789, 25.638698276002998]

- Time interval n.7: [446.92, 447.12]
 * y_true: [13.70065797]
 * v_ann: [19.415266036987305, 25.638698276002998]

* err= 0.5099420681337585
* Learning rate NN = 1.029455233947374e-05
* diff = 0.0006583502452943701
```



For scene 41/66

- \* use LR\_NN=5e-05 with err=10.320236237290588 at it=24
- \* v0\_scn\_mean = 25.813150344929316
- \* MAE = 0.49674195639901697

---



---

df n.5, scene n.42/66

---



---

We have 5 time intervals inside [449.12, 450.12]

- Time interval n.0: [449.12, 449.32]
  - \* y\_true: [26.30041929]
  - \* v\_ann: [28.81702423095703, 23.527604275732696]

---



---

- Time interval n.1: [449.32, 449.52]
  - \* y\_true: [26.14058749]
  - \* v\_ann: [28.283588409423828, 23.527604275732696]

---



---

- Time interval n.2: [449.52, 449.72]
  - \* y\_true: [29.23088983]
  - \* v\_ann: [27.739057540893555, 23.527604275732696]

---



---

- Time interval n.3: [449.72, 449.92]
  - \* y\_true: [28.81126637]

```
* v_ann: [27.00192642211914, 23.527604275732696]
```

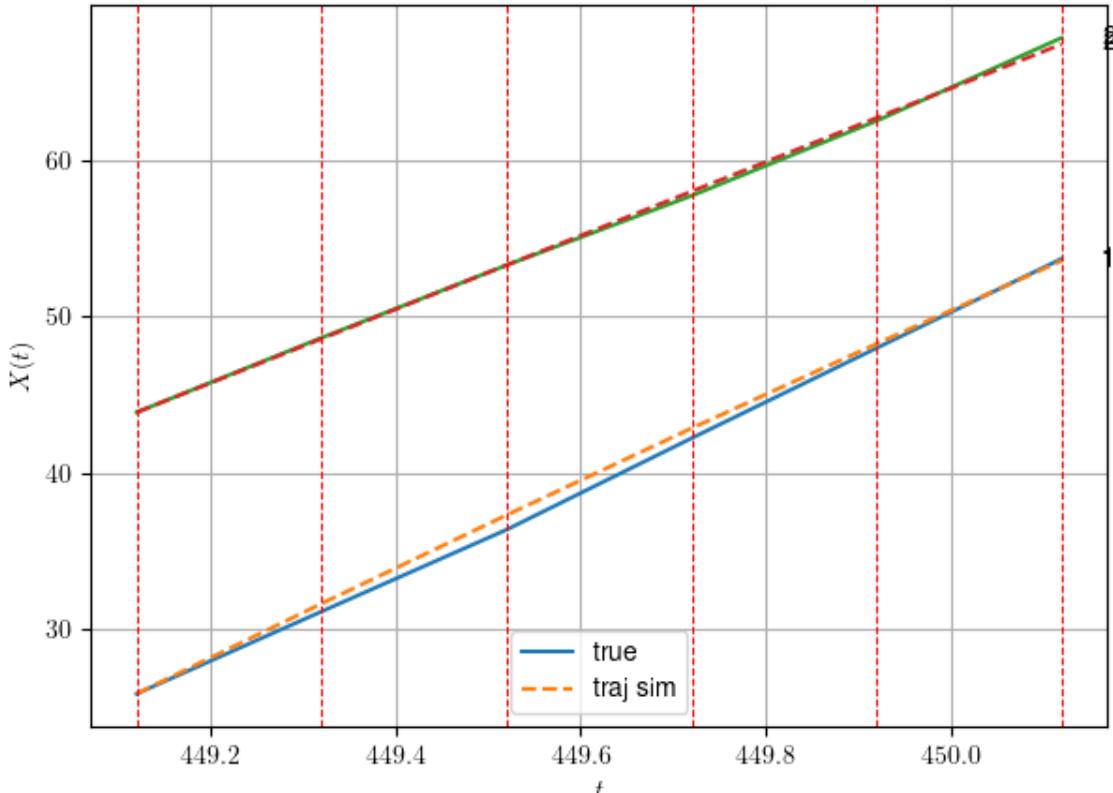
---

```
- Time interval n.4: [449.92, 450.12]
* y_true: [28.52634396]
* v_ann: [26.52985191345215, 23.527604275732696]
```

---

```
* err= 0.1582576215072393
* Learning rate NN = 1.9371018424862996e-05
* diff = 0.0010106601071010702
```

*df n. 5 – Scene n. 42, at it = 500*



For scene 42/66

```
* use LR_NN=5e-05 with err=7.956677186168408 at it=24
* v0_scn_mean = 23.786500104653847
* MAE = 0.1582576215072393
```

---



---



---

df n.5, scene n.43/66

---



---



---

We have 3 time intervals inside [450.92, 451.52]

```
- Time interval n.0: [450.92, 451.12]
* y_true: [19.05097543]
* v_ann: [18.91765594482422, 24.877482654595042]
```

---



---

```
- Time interval n.1: [451.12, 451.32]
* y_true: [19.05097543]
```

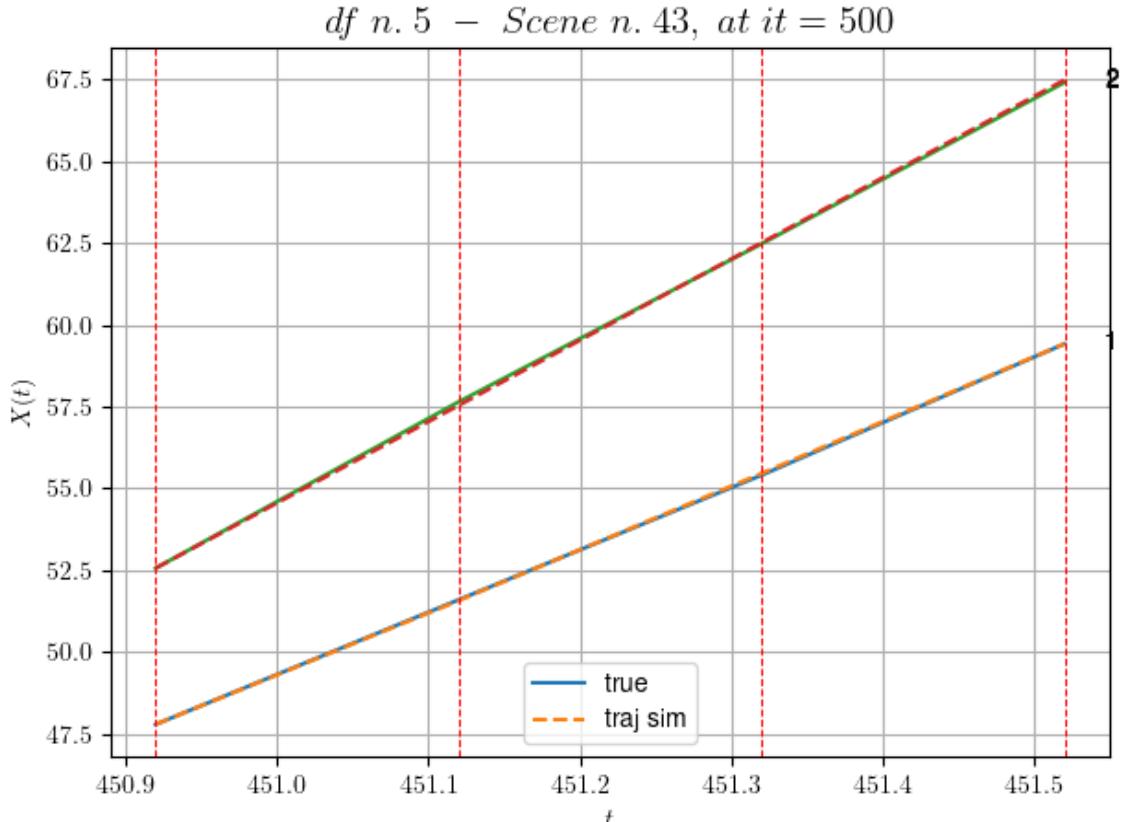
```
* v_ann: [19.459999084472656, 24.877482654595042]
```

---

- Time interval n.2: [451.32, 451.52]
  - \* y\_true: [20.07636245]
  - \* v\_ann: [19.81324005126953, 24.877482654595042]

---

- \* err= 0.0028469550372105475
- \* Learning rate NN = 0.0002952449722215533
- \* diff = 8.547529824121016e-06



For scene 43/66

- \* use LR\_NN=0.0005 with err=2.0448638721933037 at it=24
- \* v0\_scn\_mean = 25.08238334837388
- \* MAE = 0.0028469550372105475

---



---

df n.5, scene n.44/66

---



---

We have 5 time intervals inside [457.32, 458.32]

- Time interval n.0: [457.32, 457.52]
  - \* y\_true: [11.94945293]
  - \* v\_ann: [11.86895751953125, 16.493097805853914]

---



---

- Time interval n.1: [457.52, 457.72]

```
* y_true: [7.74600753]
* v_ann: [7.7840094566345215, 16.493097805853914]
```

---

```
- Time interval n.2: [457.72, 457.92]
* y_true: [8.72842902]
* v_ann: [8.912372589111328, 16.493097805853914]
```

---

```
- Time interval n.3: [457.92, 458.12]
* y_true: [8.72842902]
* v_ann: [8.474188804626465, 16.493097805853914]
```

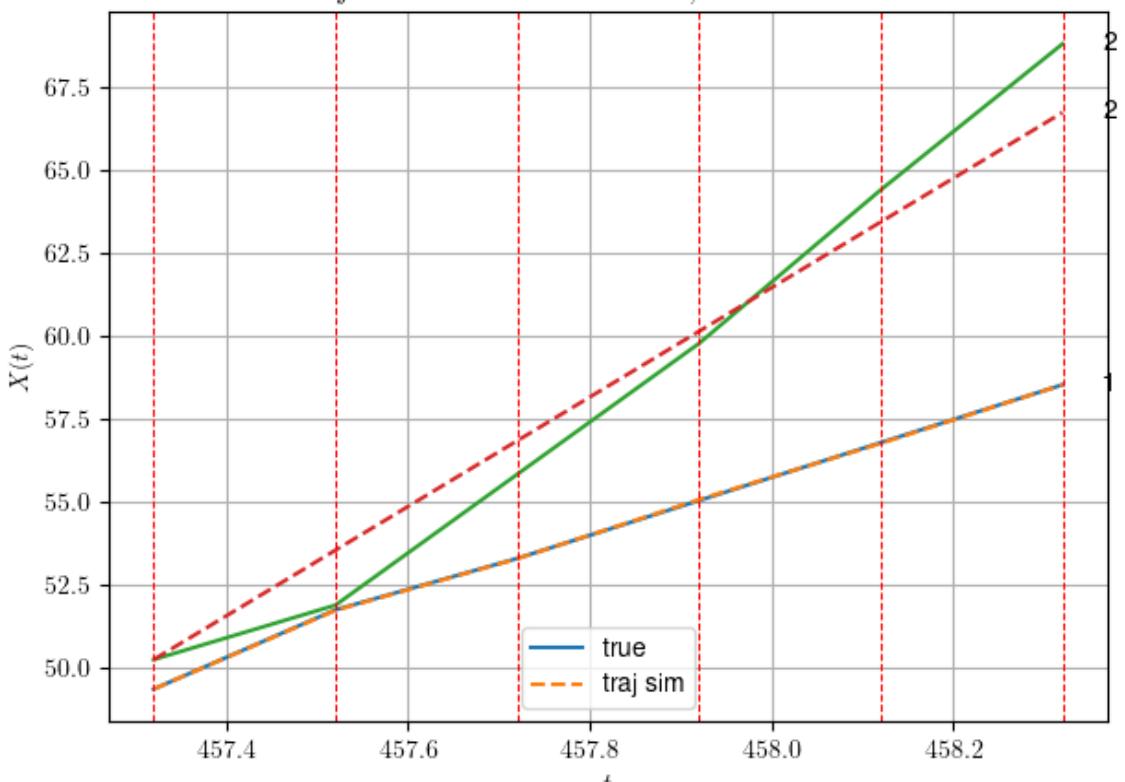
---

```
- Time interval n.4: [458.12, 458.32]
* y_true: [8.72842902]
* v_ann: [8.834087371826172, 16.493097805853914]
```

---

```
* err= 0.7600992281820128
* Learning rate NN = 0.0019371019443497062
* diff = 2.5776177048353333e-05
```

*df n. 5 – Scene n. 44, at it = 500*



For scene 44/66

```
* use LR_NN=0.005 with err=29.988993072989327 at it=24
* v0_scn_mean = 17.033373893516117
* MAE = 0.6364006028895205
```

```
df n.5, scene n.45/66
```

```
=====
=====
```

We have 5 time intervals inside [472.72, 473.72]

- Time interval n.0: [472.72, 472.92]
  - \* y\_true: [19.93584545]
  - \* v\_ann: [22.470626831054688, 19.394739027416133]

---

---

- Time interval n.1: [472.92, 473.12]
  - \* y\_true: [20.45091523]
  - \* v\_ann: [22.07706642150879, 19.394739027416133]

---

---

- Time interval n.2: [473.12, 473.32]
  - \* y\_true: [22.97126692]
  - \* v\_ann: [22.257291793823242, 19.394739027416133]

---

---

- Time interval n.3: [473.32, 473.52]
  - \* y\_true: [22.64147966]
  - \* v\_ann: [22.019302368164062, 19.394739027416133]

---

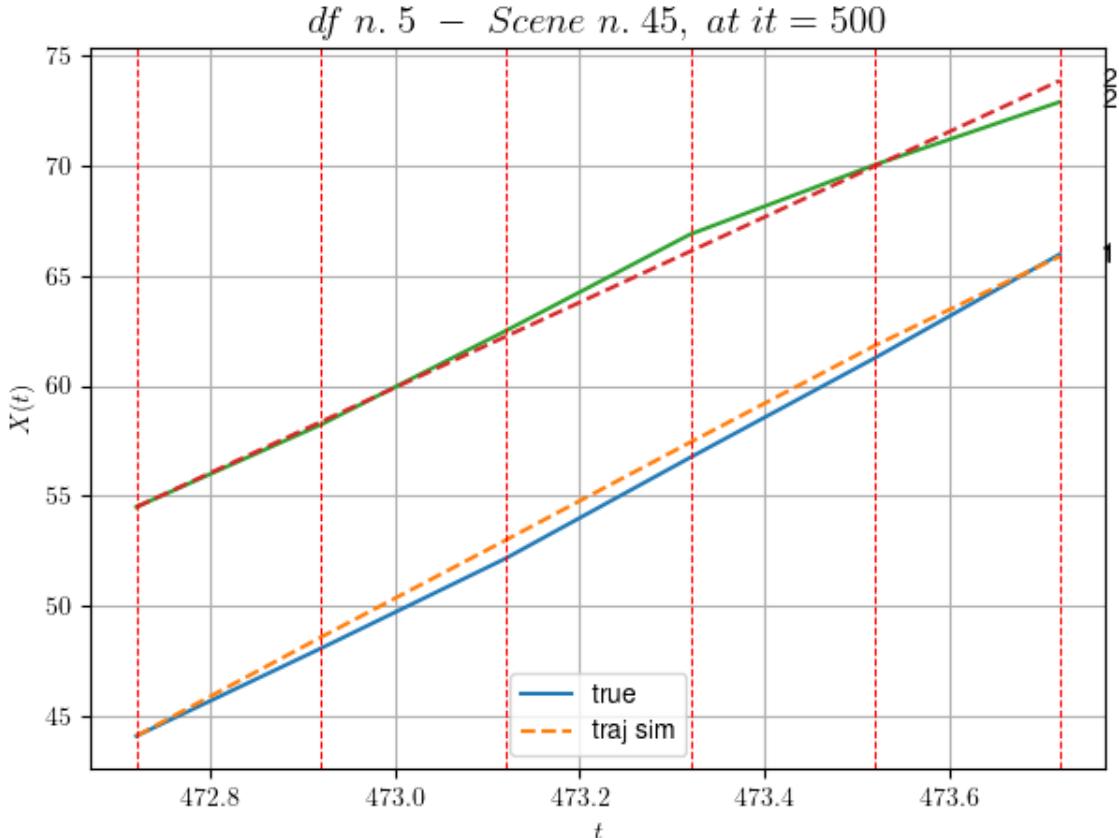
---

- Time interval n.4: [473.52, 473.72]
  - \* y\_true: [23.56191271]
  - \* v\_ann: [20.248146057128906, 19.394739027416133]

---

---

- \* err= 0.2809239990636994
- \* Learning rate NN = 1.9371018424862996e-05
- \* diff = 0.0005948786139856055



For scene 45/66

```
* use LR_NN=5e-05 with err=21.541144985470495 at it=24
* v0_scn_mean = 19.818949466238365
* MAE = 0.280864098093659
```

---



---

df n.5, scene n.46/66

---



---

We have 2 time intervals inside [490.92, 491.32]

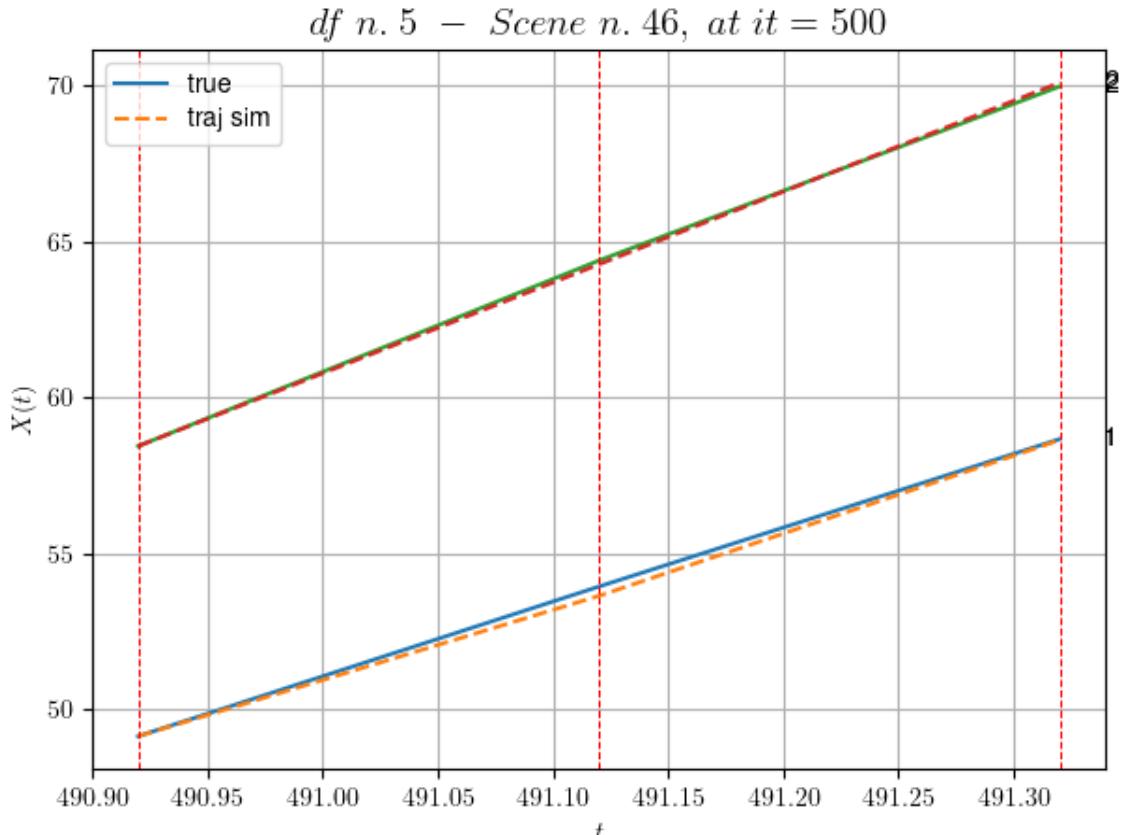
- Time interval n.0: [490.92, 491.12]
  - \* y\_true: [23.97608635]
  - \* v\_ann: [22.480518341064453, 29.115594759203244]

---

- Time interval n.1: [491.12, 491.32]
  - \* y\_true: [23.6265296]
  - \* v\_ann: [24.9527645111084, 29.115594759203244]

---

- \* err= 0.02017157439886258
  - \* Learning rate NN = 0.00036449998151510954
  - \* diff = 7.666301976898965e-05



For scene 46/66

\* use LR\_NN=0.0005 with err=0.07437079754943626 at it=24  
\* v0\_scn\_mean = 29.150970968831142  
\* MAE = 0.019930255080722225

---

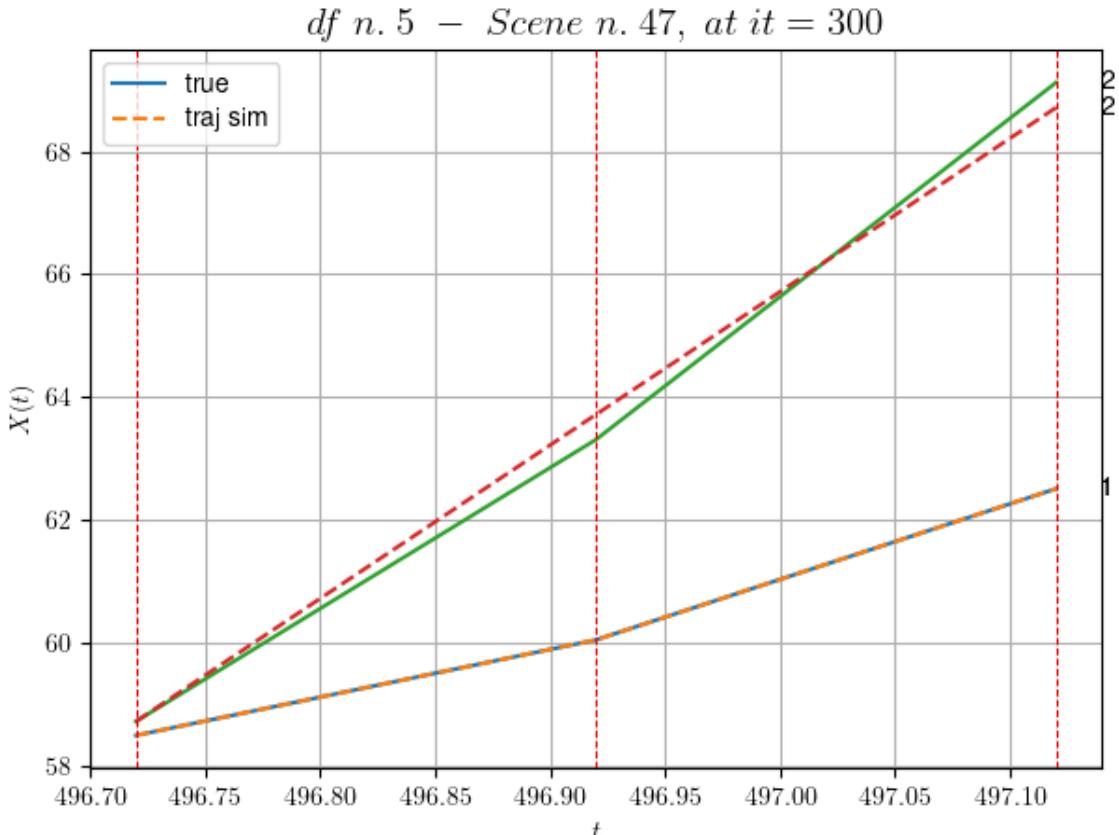
---

df n.5, scene n.47/66

---

---

We have 2 time intervals inside [496.72, 497.12]  
\* err= 0.05552772655218144  
\* Learning rate NN = 0.008099999278783798  
\* diff = 3.364744715211865e-07



For scene 47/66

```
* use LR_NN=0.01 with err=0.7496810652739723 at it=24
* v0_scn_mean = 25.343568444427394
* MAE = 0.04997553025422802
```

---



---

df n.5, scene n.48/66

---



---

We have 5 time intervals inside [502.72, 503.72]

- Time interval n.0: [502.72, 502.92]
  - \* y\_true: [19.30098453]
  - \* v\_ann: [26.09378433227539, 13.65141402205004]

---

- Time interval n.1: [502.92, 503.12]
  - \* y\_true: [23.85148399]
  - \* v\_ann: [23.60904312133789, 13.65141402205004]

---

- Time interval n.2: [503.12, 503.32]
  - \* y\_true: [30.67723317]
  - \* v\_ann: [22.896394729614258, 13.65141402205004]

---

- Time interval n.3: [503.32, 503.52]
  - \* y\_true: [24.29690284]

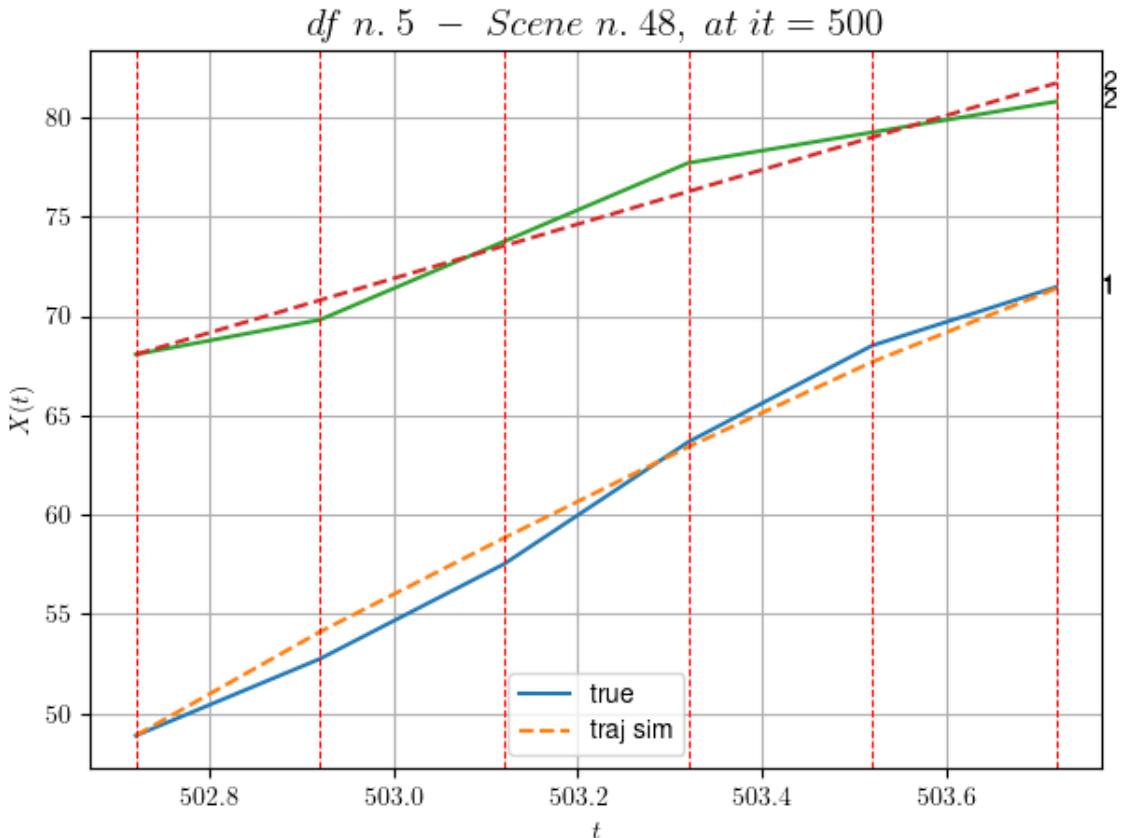
```
* v_ann: [21.391597747802734, 13.65141402205004]
```

---

```
- Time interval n.4: [503.52, 503.72]
* y_true: [14.72640734]
* v_ann: [18.471750259399414, 13.65141402205004]
```

---

```
* err= 0.6956535083451787
* Learning rate NN = 1.9371018424862996e-05
* diff = 0.0018207215604888471
```



For scene 48/66

```
* use LR_NN=5e-05 with err=49.81673068774807 at it=24
* v0_scn_mean = 14.30535746104312
* MAE = 0.6956535083451787
```

---



---

df n.5, scene n.49/66

---



---

We have 3 time intervals inside [525.52,526.12]

```
- Time interval n.0: [525.52, 525.72]
* y_true: [20.6706729]
* v_ann: [23.735105514526367, 23.539355454248053]
```

---



---

```
- Time interval n.1: [525.72, 525.92]
```

```
* y_true: [22.29092446]
* v_ann: [23.132225036621094, 23.539355454248053]
```

---

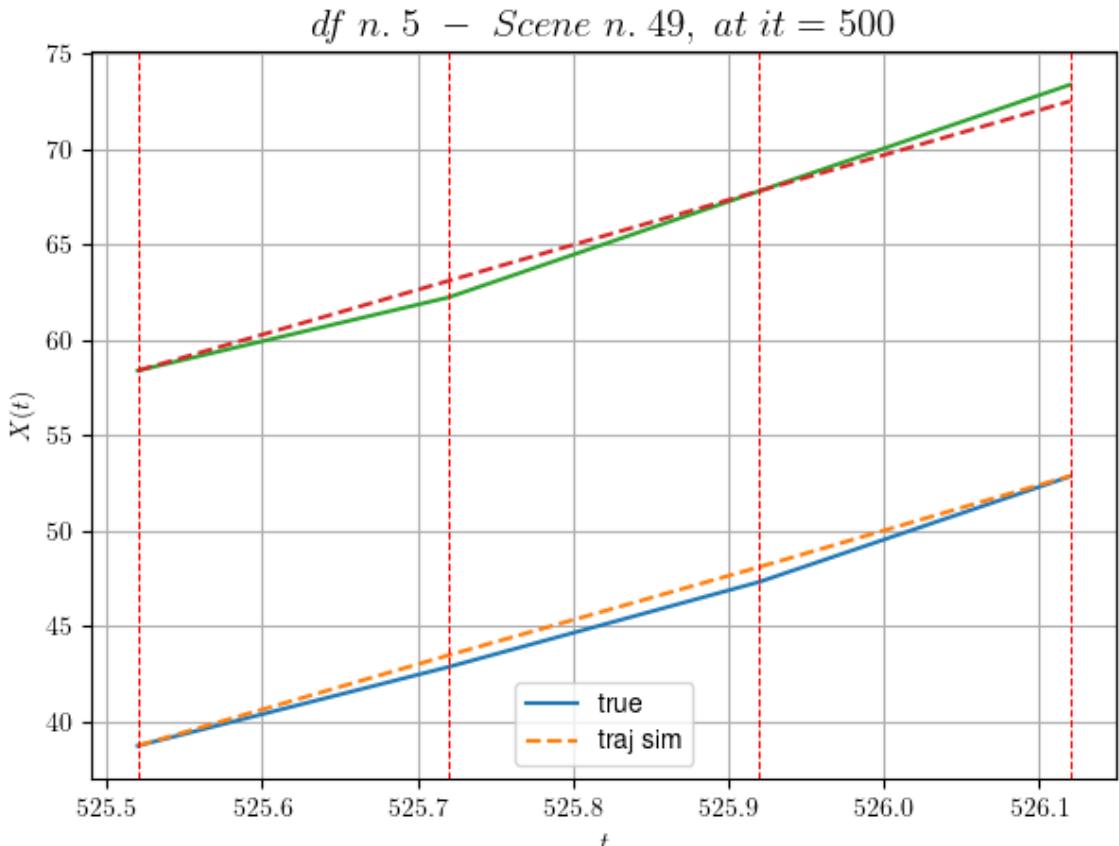
```
- Time interval n.2: [525.92, 526.12]
```

```
* y_true: [27.65144368]
```

```
* v_ann: [23.88067626953125, 23.539355454248053]
```

---

```
* err= 0.3115098277690689
* Learning rate NN = 2.952449540316593e-05
* diff = 0.0002522160610326600
```



For scene 49/66

```
* use LR_NN=5e-05 with err=2.6430625809779418 at it=24
```

```
* v0_scn_mean = 23.79778123602923
```

```
* MAE = 0.30131300919646603
```

---



---



---

df n.5, scene n.50/66

---



---



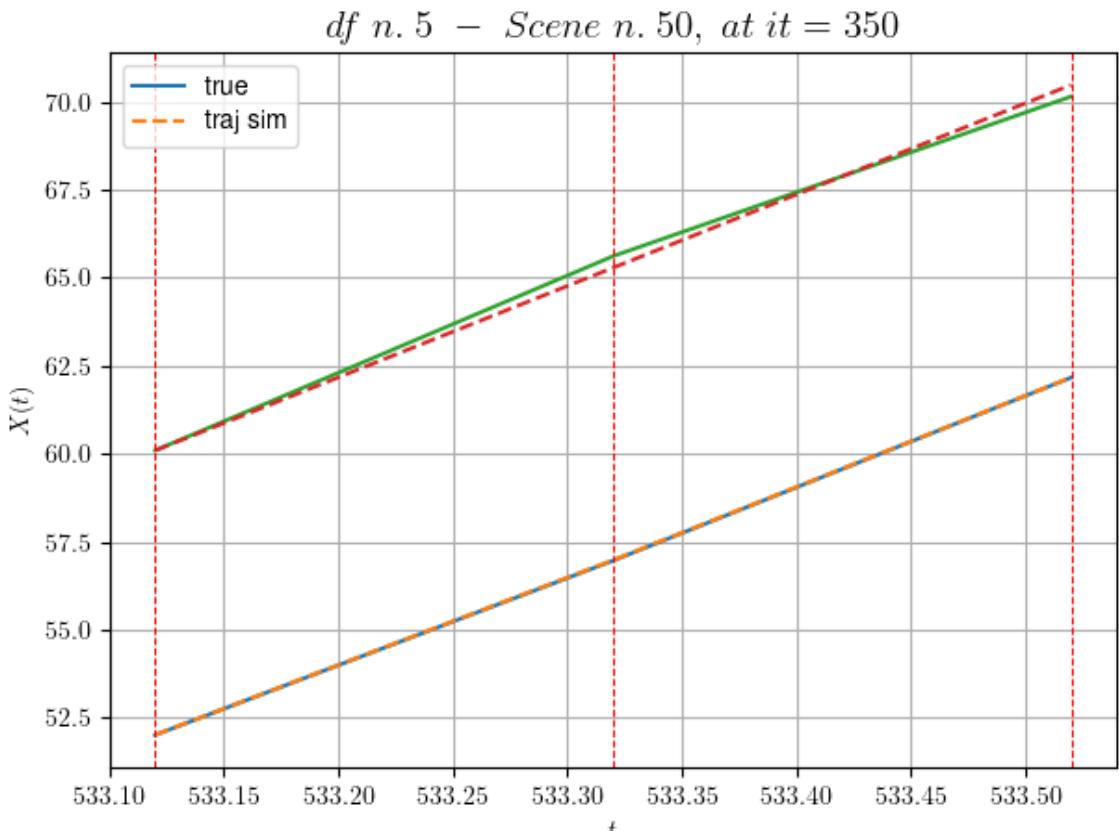
---

We have 2 time intervals inside [533.12,533.52]

```
* err= 0.03605159285129105
```

```
* Learning rate NN = 0.00040499999886378646
```

```
* diff = 2.0055817848141366e-07
```



For scene 50/66

- \* use LR\_NN=0.0005 with err=0.6724710729596834 at it=24
- \* v0\_scn\_mean = 26.180221986342648
- \* MAE = 0.03605159285129105

---



---

df n.5, scene n.51/66

---



---

We have 3 time intervals inside [535.32, 535.92]

- Time interval n.0: [535.32, 535.52]
  - \* y\_true: [13.74931105]
  - \* v\_ann: [13.556227684020996, 21.278077520484022]

---

- Time interval n.1: [535.52, 535.72]
  - \* y\_true: [8.15050406]
  - \* v\_ann: [8.49592113494873, 21.278077520484022]

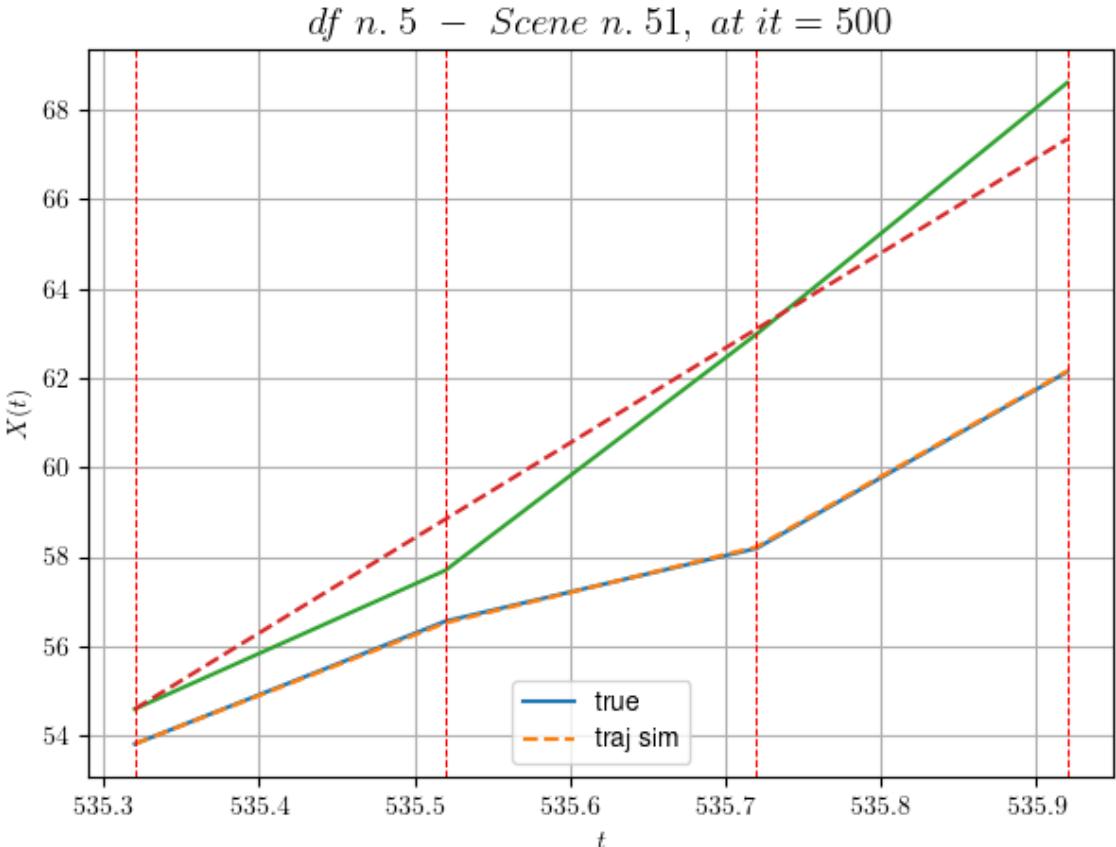
---

- Time interval n.2: [535.72, 535.92]
  - \* y\_true: [19.77148161]
  - \* v\_ann: [19.71426773071289, 21.278077520484022]

---

- \* err= 0.36607989948102304
- \* Learning rate NN = 0.0029524494893848896

\* diff = 0 00016870757324893848



For scene 51/66

\* use LR\_NN=0.005 with err=4.713239713779734 at it=24  
 \* v0\_scn\_mean = 21.626954419600803  
 \* MAE = 0.35399792594124124

---



---

df n.5, scene n.52/66

---



---

We have 4 time intervals inside [23.72, 24.52]

- Time interval n.0: [23.72, 23.92]
  - \* y\_true: [21.79018354 24.07032953]
  - \* v\_ann: [-0.006380761973559856, -1.786110084974704e-14, 24.534803734519368]

---

- Time interval n.1: [23.92, 24.12]
  - \* y\_true: [25.91031727 27.52052784]
  - \* v\_ann: [-0.0037731698248535395, -2.69888752730922e-14, 24.534803734519368]

---

- Time interval n.2: [24.12, 24.32]
  - \* y\_true: [19.61033273 24.42062846]
  - \* v\_ann: [-0.002606028225272894, -7.020370341916798e-14, 24.534803734519368]

```

 - Time interval n.3: [24.32, 24.52]

 * y_true: [17.8304062 20.21066815]

 * v_ann: [-0.0008680819300934672, -2.98109959298315

66e-14, 24.534803734519368]

```

```

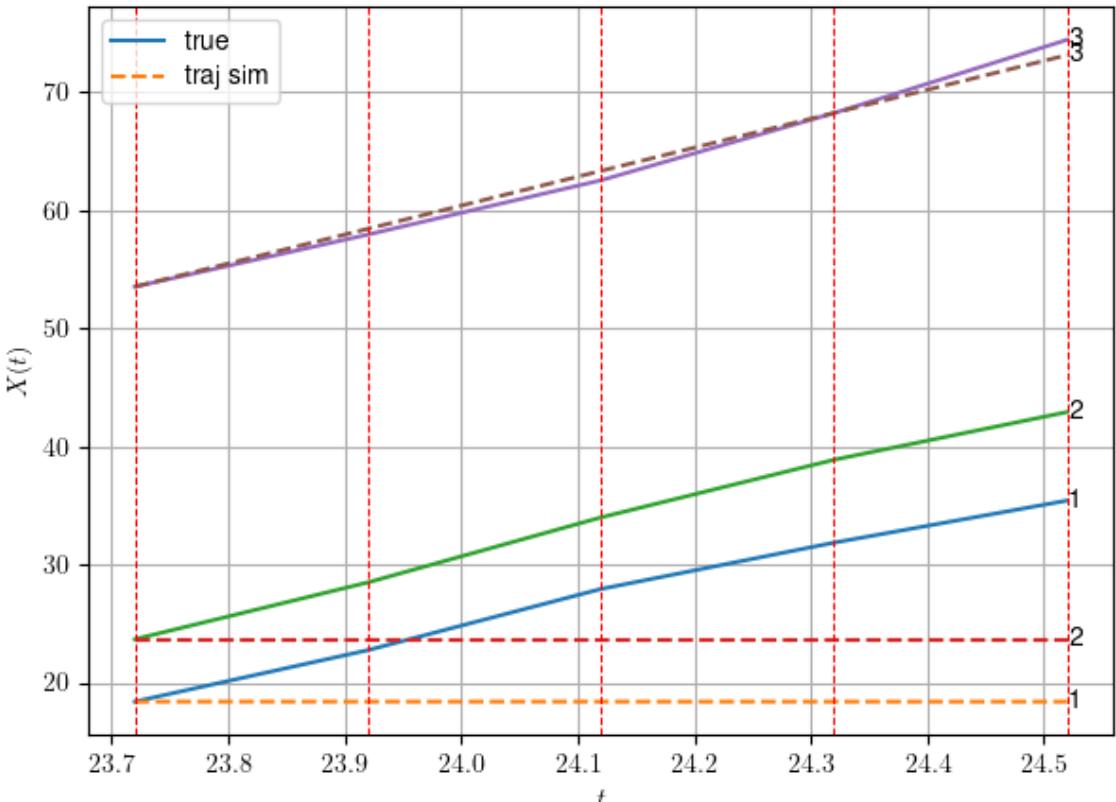
 * err= 87.6702093377815

 * Learning rate NN = 0.000239148415857926

 * diff = 0.0009605110069088596

```

*df n. 5 – Scene n. 52, at it = 500*



For scene 52/66

```

* use LR_NN=0.0005 with err=19.04956228691122 at it=24
* v0_scn_mean = 24.86271526507275
* MAE = 55.0046184359637

```

=====

=====

=====

df n.5, scene n.53/66

=====

=====

```

=====

=====

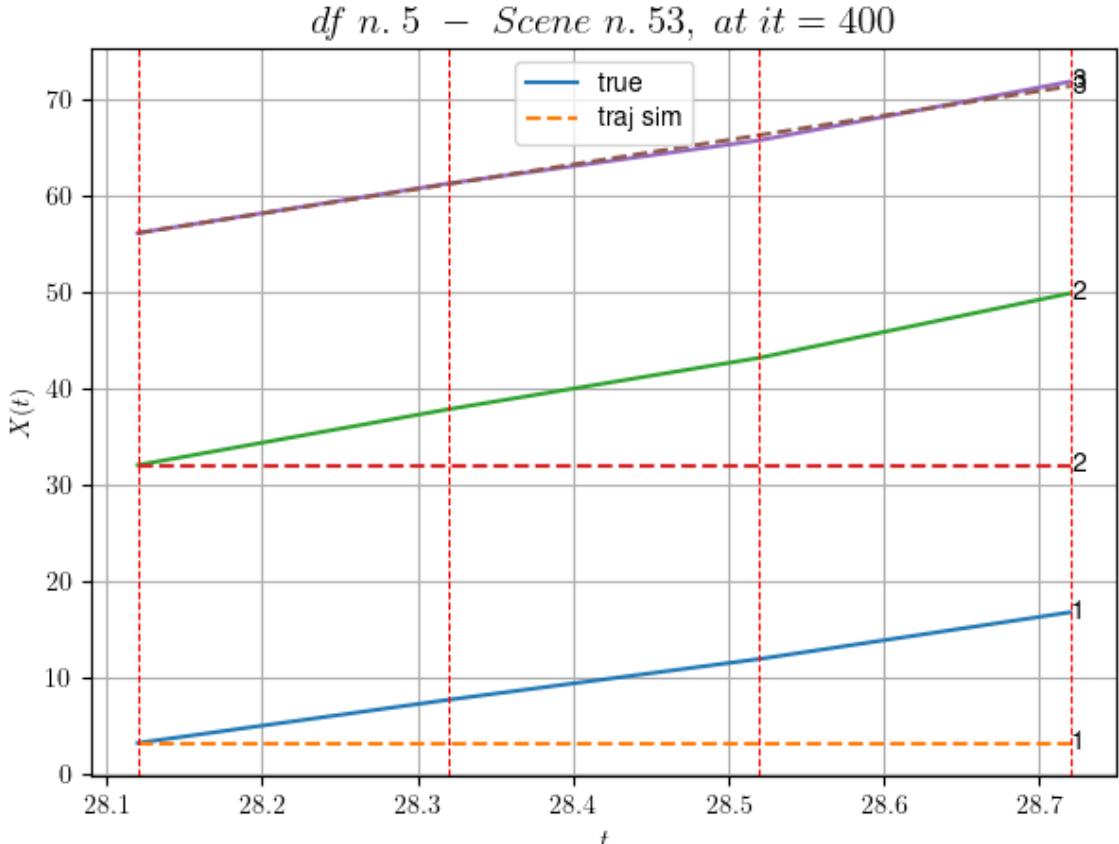
We have 3 time intervals inside [28.12,28.72]

* err= 62.86954747341235

* Learning rate NN = 6.560998735949397e-05

* diff = 3.5787392960173747e-07

```



For scene 53/66

- \* use LR\_NN=0.0001 with err=4.896372319773358 at it=24
- \* v0\_scn\_mean = 25.725929368611094
- \* MAE = 62.868555980109484

---



---

df n.5, scene n.54/66

---



---

We have 3 time intervals inside [146.52, 147.12]

- Time interval n.0: [146.52, 146.72]
  - \* y\_true: [32.70054419 14.69037585]
  - \* v\_ann: [4.869231997872703e-05, -1.8086724340449223e-09, 33.2471852781234]

---



---

- Time interval n.1: [146.72, 146.92]
  - \* y\_true: [35.65090038 15.01046474]
  - \* v\_ann: [0.13000676035881042, -2.255698579312071e-11, 33.2471852781234]

---



---

- Time interval n.2: [146.92, 147.12]
  - \* y\_true: [28.09191726 21.83491468]
  - \* v\_ann: [26.0728702545166, -1.9184339446892684e-13, 33.2471852781234]

---

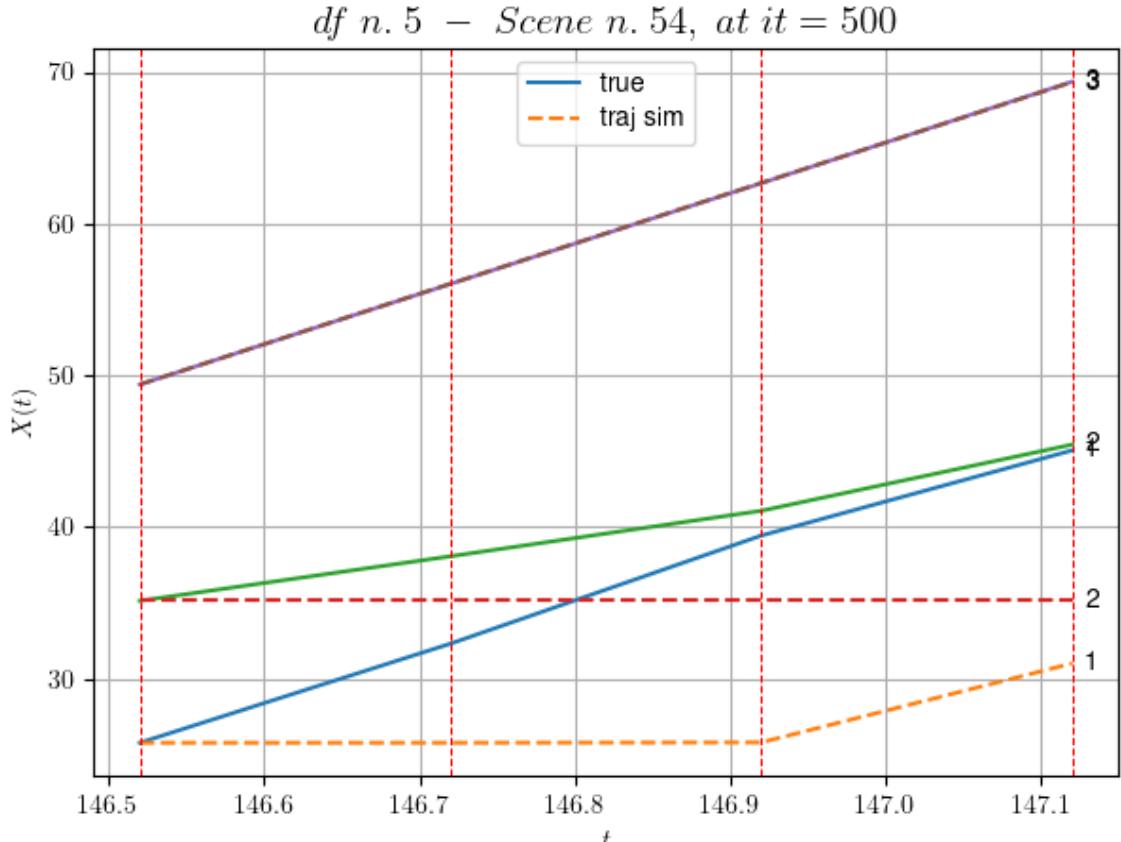


---

```

* err= 48.03704797662283
* Learning rate NN = 0.0005904899444431067
* diff = 0.3301064017916602

```



For scene 54/66

```

* use LR_NN=0.001 with err=25.242646104626385 at it=24
* v0_scn_mean = 33.052354307227105
* MAE = 13.957351302918381

```

---



---

df n.5, scene n.55/66

---



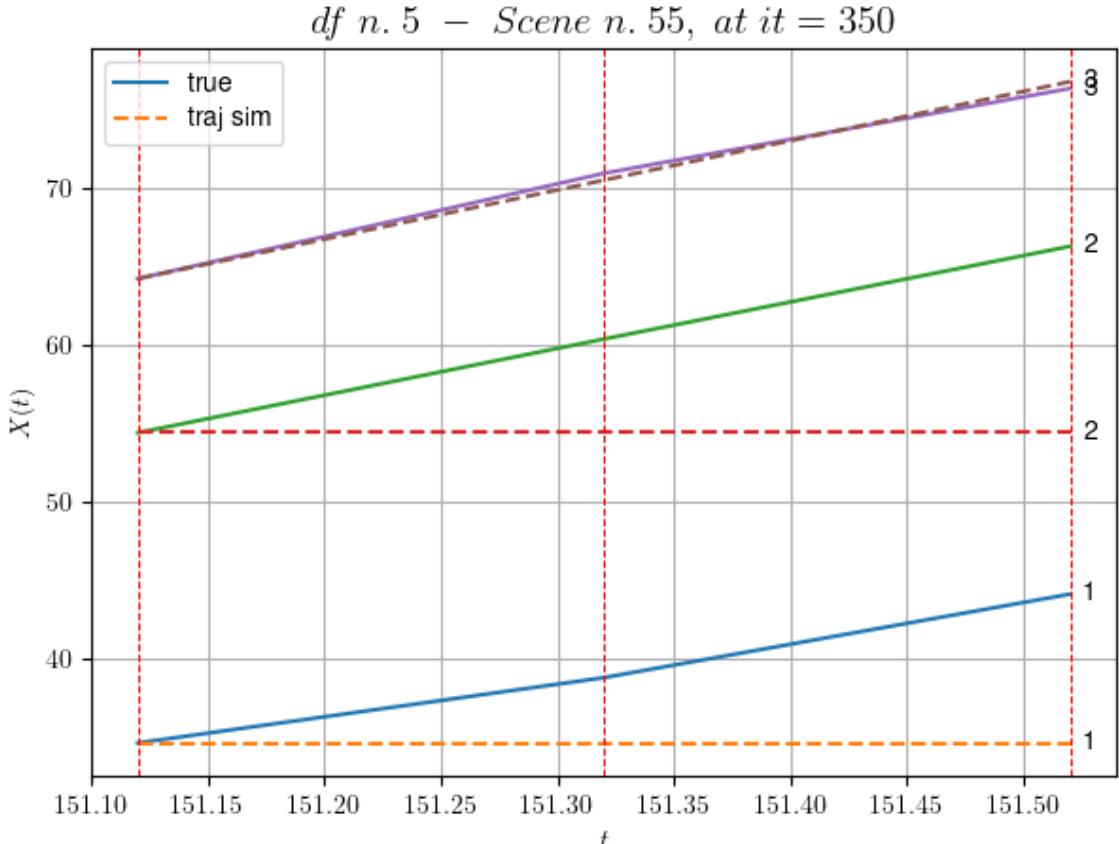
---

We have 2 time intervals inside [151.12,151.52]

```

* err= 31.843725124368678
* Learning rate NN = 8.099999104160815e-05
* diff = 9.099848554683376e-07

```



For scene 55/66

- \* use LR\_NN=0.0001 with err=5.984547705329525 at it=24
- \* v0\_scn\_mean = 31.386184964733232
- \* MAE = 31.83947559869571

---



---

df n.5, scene n.56/66

---



---

We have 6 time intervals inside [177.32, 178.52]

- Time interval n.0: [177.32, 177.52]
  - \* y\_true: [23.78017477 21.57540501]
  - \* v\_ann: [-4.3440272179395834e-07, -2.6249233342490186e-10, 26.180378384786355]

---



---

- Time interval n.1: [177.52, 177.72]
  - \* y\_true: [28.99044664 21.37044807]
  - \* v\_ann: [-7.904421863713651e-07, -1.1822322287802223e-10, 26.180378384786355]

---



---

- Time interval n.2: [177.72, 177.92]
  - \* y\_true: [30.9005134 20.55062028]
  - \* v\_ann: [-6.366278739733389e-06, -5.595424124038573e-11, 26.180378384786355]

---



---

```

 - Time interval n.3: [177.92, 178.12]

 * y_true: [25.28069635 21.93575232]

 * v_ann: [-0.00011544217704795301, -9.7524184908270

86e-12, 26.180378384786355]

 - Time interval n.4: [178.12, 178.32]

 * y_true: [23.87574209 27.4762805]

 * v_ann: [-0.0003011189110111445, -7.63063223718774

e-13, 26.180378384786355]

 - Time interval n.5: [178.32, 178.52]

 * y_true: [37.1766426 26.34131635]

 * v_ann: [-0.00010733243834692985, -6.7028771855853

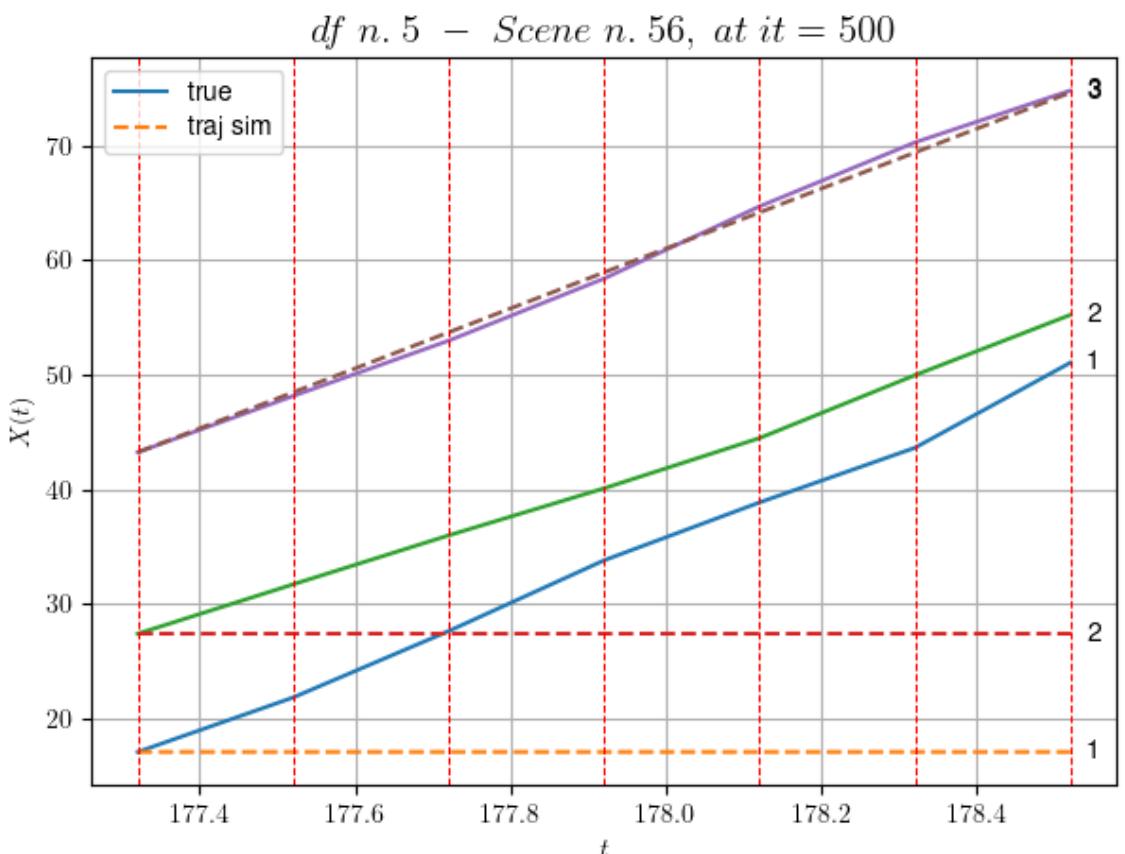
76e-13, 26.180378384786355]

* err= 218.27767315545842

* Learning rate NN = 0.00031381050939671695

* diff = 3.4889226867562684e-06

```

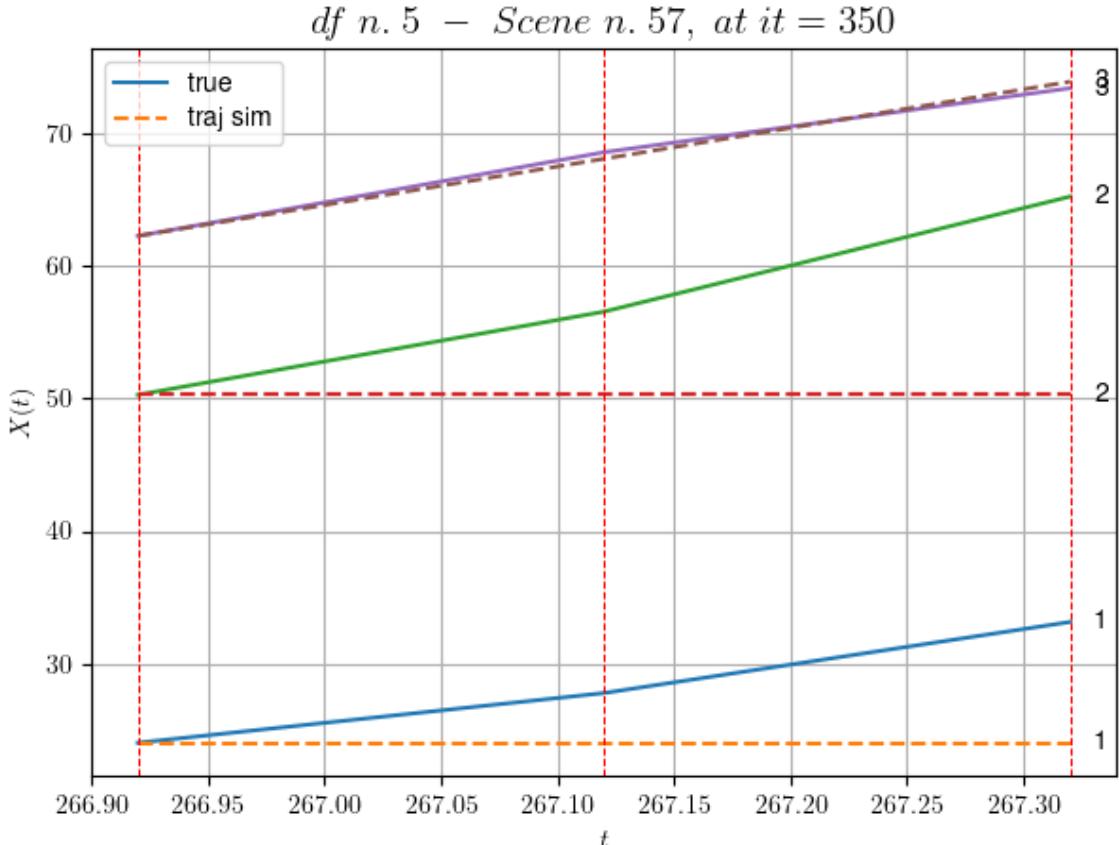


For scene 56/66  
\* use LR\_NN=0.001 with err=32.25799724148394 at it=24  
\* v0\_scn\_mean = 26.40955551020645  
\* MAE = 33.713077760290446

df n.5, scene n.57/66

```
=====
=====

We have 2 time intervals inside [266.92,267.32]
* err= 40.03434189248327
* Learning rate NN = 4.049999552080408e-05
* diff = 6.217543528919123e-07
```



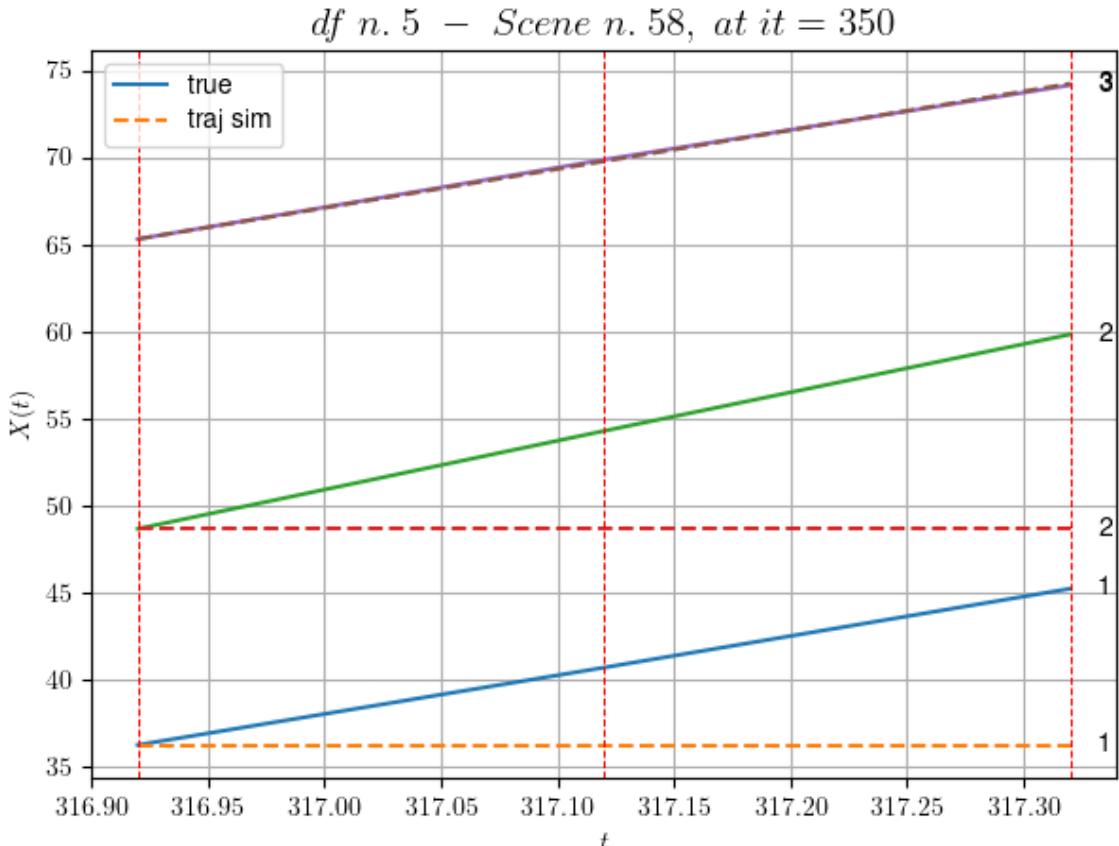
For scene 57/66

```
* use LR_NN=5e-05 with err=13.183905505247772 at it=24
* v0_scn_mean = 29.164069469574002
* MAE = 40.03434189248327
```

df n.5, scene n.58/66

```
=====
=====

We have 2 time intervals inside [316.92,317.32]
* err= 28.554702798900887
* Learning rate NN = 0.0008099999977275729
* diff = 9.940641305661302e-07
```



For scene 58/66

- \* use LR\_NN=0.001 with err=1.348607730741185 at it=24
- \* v0\_scn\_mean = 22.99843700181211
- \* MAE = 28.554702798900887

---



---

df n.5, scene n.59/66

---



---

We have 2 time intervals inside [319.52, 319.92]

- Time interval n.0: [319.52, 319.72]
  - \* y\_true: [27.72084838 29.03197957]
  - \* v\_ann: [-5.471709172452481e-14, -0.0007121312664821744, 27.222459940407443]

---



---

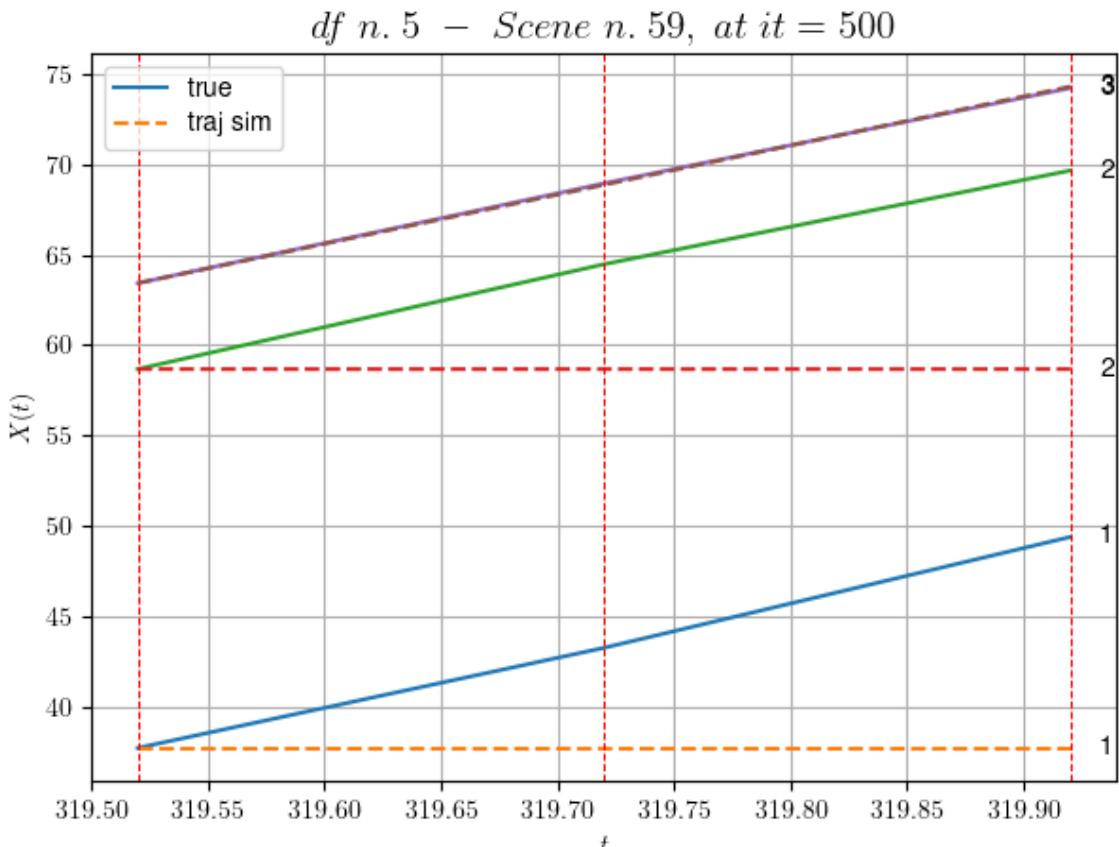
- Time interval n.1: [319.72, 319.92]
  - \* y\_true: [30.70139257 25.95234102]
  - \* v\_ann: [-3.783602662947583e-14, -0.001093640341423452, 27.222459940407443]

---



---

- \* err= 35.77042119430141
- \* Learning rate NN = 0.0007289999630302191
- \* diff = 2.9007930237412438e-05



For scene 59/66

\* use LR\_NN=0.001 with err=8.037935660687095 at it=24  
\* v0\_scn\_mean = 27.38911221927754  
\* MAE = 35.77042119430141

---

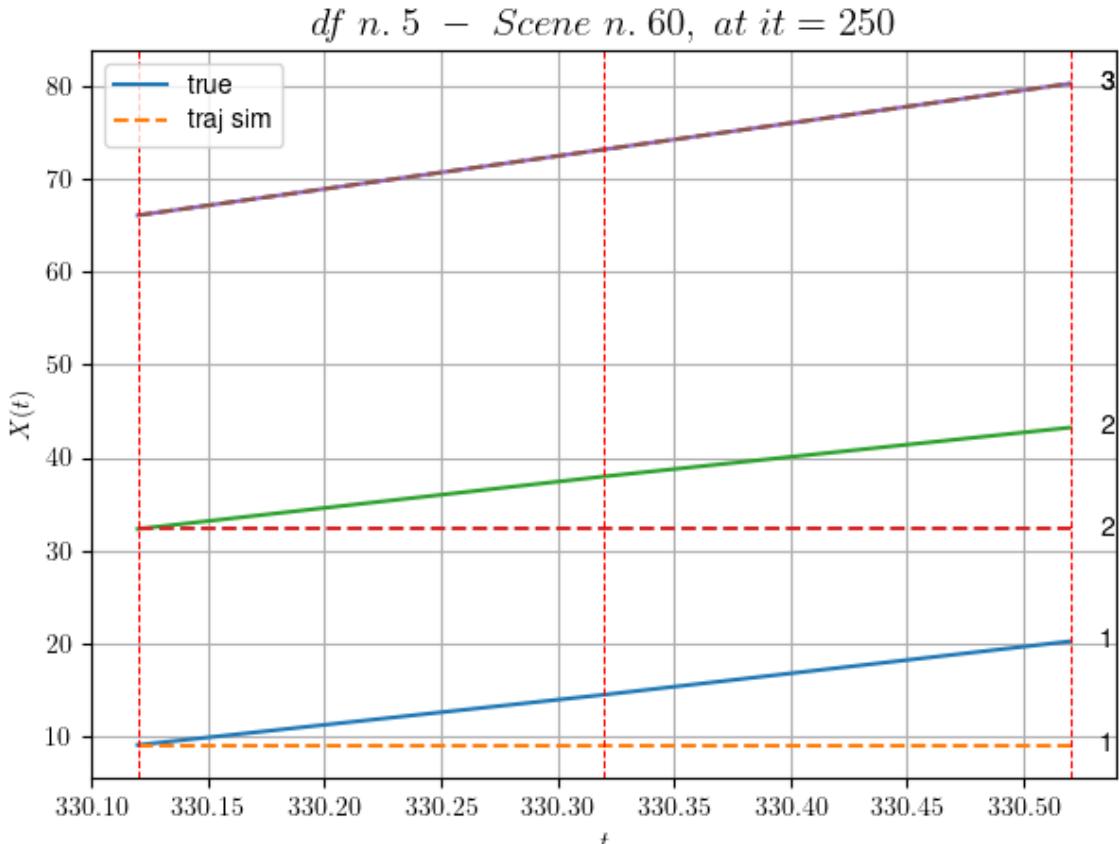
---

df n.5, scene n.60/66

---

---

We have 2 time intervals inside [330.12,330.52]  
\* err= 33.89800470930249  
\* Learning rate NN = 4.499999704421498e-05  
\* diff = 8.296284335074233e-07



For scene 60/66

\* use LR\_NN=5e-05 with err=1.8863261368138537 at it=24  
\* v0\_scn\_mean = 34.82137859412048  
\* MAE = 33.89800470930249

---

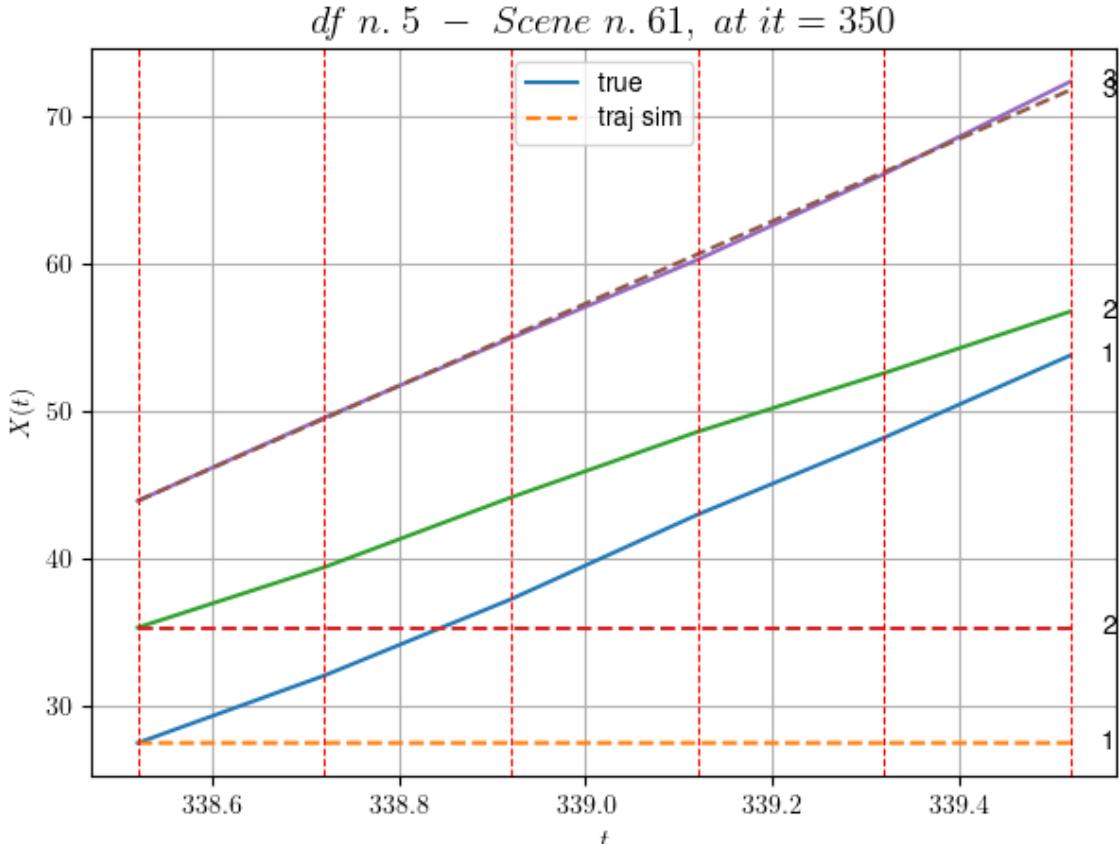
---

df n.5, scene n.61/66

---

---

We have 5 time intervals inside [338.52, 339.52]  
\* err= 138.89500743759217  
\* Learning rate NN = 2.6572044589556754e-05  
\* diff = 7.224206228784169e-07



For scene 61/66

- \* use LR\_NN=5e-05 with err=12.156582759507069 at it=24
- \* v0\_scn\_mean = 28.03787603699517
- \* MAE = 138.89401438499962

---



---

df n.5, scene n.62/66

---



---

We have 5 time intervals inside [435.72, 436.72]

- Time interval n.0: [435.72, 435.92]
  - \* y\_true: [16.6003121 32.10080247]
  - \* v\_ann: [-0.0061441464349627495, -5.040192980858282e-13, 23.00226947805203]

---



---

- Time interval n.1: [435.92, 436.12]
  - \* y\_true: [17.55040576 22.4007406 ]
  - \* v\_ann: [-6.29787755315192e-05, -1.6604389738161807e-11, 23.00226947805203]

---



---

- Time interval n.2: [436.12, 436.32]
  - \* y\_true: [16.72550921 26.8011085 ]
  - \* v\_ann: [-1.376467935187975e-05, -8.57046378310855e-12, 23.00226947805203]

---



---

```

 - Time interval n.3: [436.32, 436.52]

 * y_true: [16.72550921 28.00144696]

 * v_ ann: [-6.311013862614345e-07, -1.05765569913263

 14e-11, 23.00226947805203]

 - Time interval n.4: [436.52, 436.72]

 * y_true: [20.80081615 7.85046318]

 * v_ ann: [-2.1717637466167616e-08, -1.4320043761895

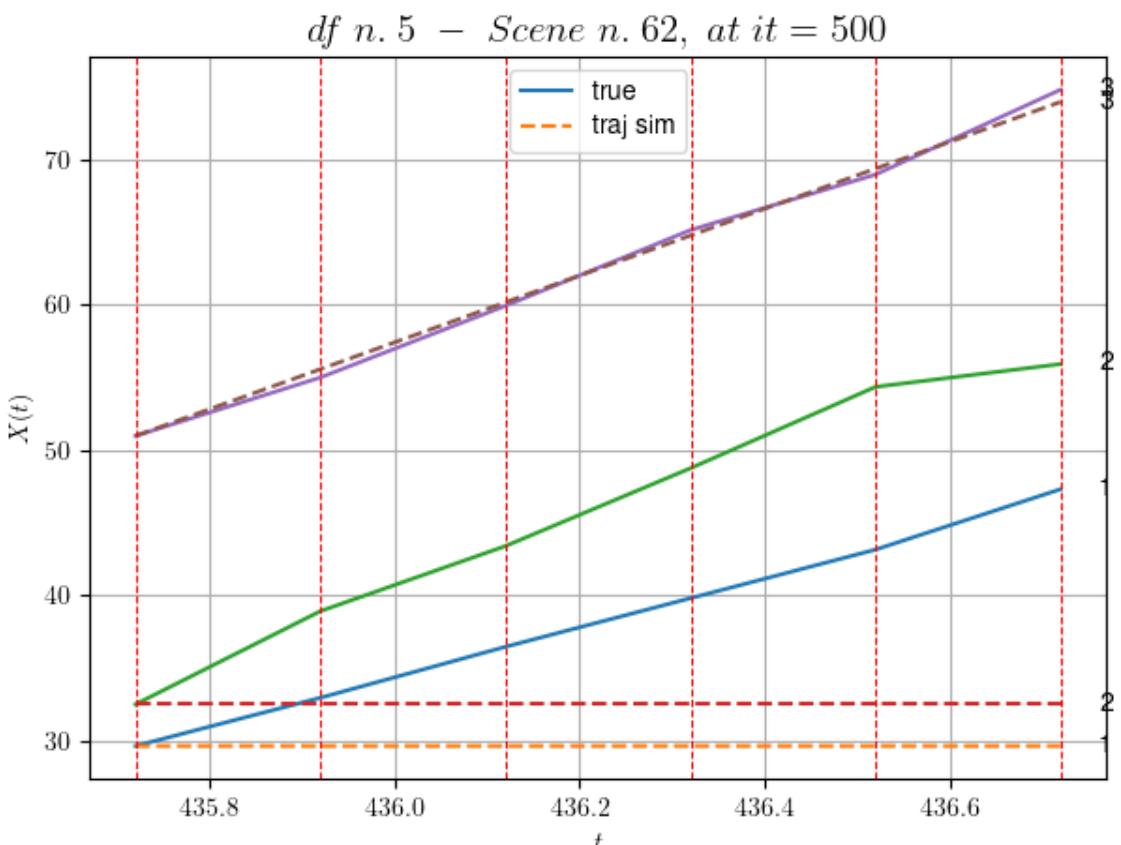
 107e-10, 23.00226947805203]

* err= 117.1932759776689

* Learning rate NN = 0.0001937102060765028

* diff = 0.0002456939446489059

```



For scene 62/66  
 \* use LR\_NN=0.0005 with err=13.50869088606747 at it=24  
 \* v0\_scn\_mean = 23.422132995186377  
 \* MAE = 117.18955100678973

---

---

---

df n.5, scene n.63/66

---

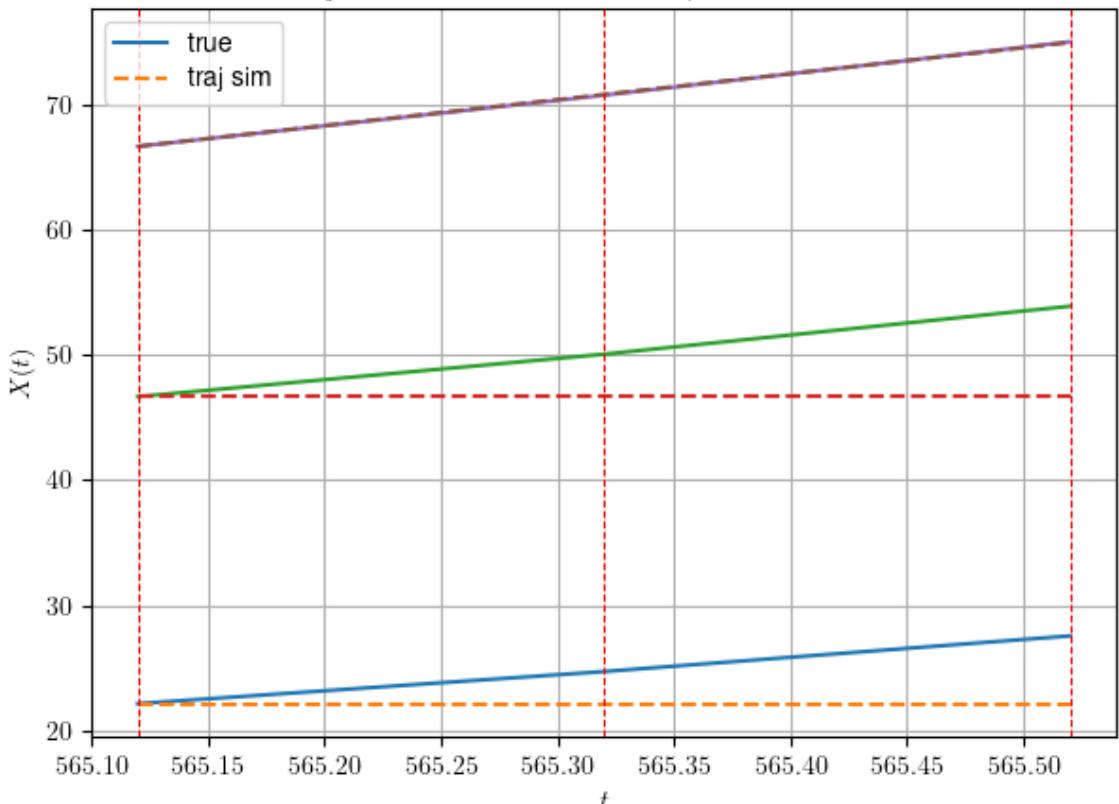
---

---

We have 2 time intervals inside [565.12, 565.52]  
 \* err= 11.072702448748643  
 \* Learning rate NN = 8.099999104160815e-05

\* diff = 7.965085444539e-07

df n. 5 - Scene n. 63, at it = 350



For scene 63/66

\* use LR\_NN=0.0001 with err=2.526473133724894 at it=24  
\* v0\_scn\_mean = 21.543137941359355  
\* MAE = 11.07261532948354

=====

=====

=====

df n.5, scene n.64/66

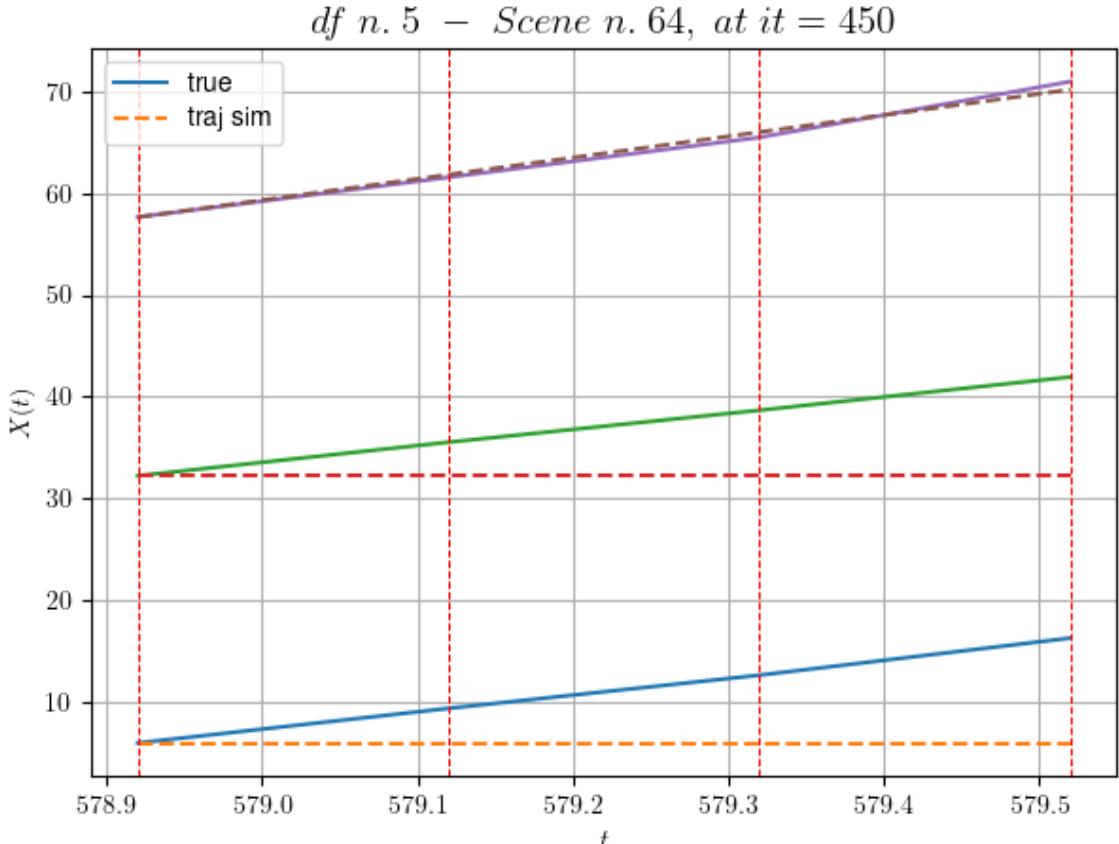
=====

=====

=====

We have 3 time intervals inside [578.92,579.52]

\* err= 25.861348212250874  
\* Learning rate NN = 2.952449540316593e-05  
\* diff = 3.342498473557498e-07



For scene 64/66

- \* use LR\_NN=5e-05 with err=3.6273981037122147 at it=24
- \* v0\_scn\_mean = 21.522170066390313
- \* MAE = 25.854708904006205

---



---

df n.5, scene n.65/66

---



---

We have 2 time intervals inside [178.12, 178.52]

- Time interval n.0: [178.12, 178.32]
  - \* y\_true: [23.59034379 23.87574209 27.4762805 ]
  - \* v\_ann: [-4.696361632916535e-10, -0.00010778583236 970007, -3.7249700258991034e-14, 26.19236210839535]

---



---

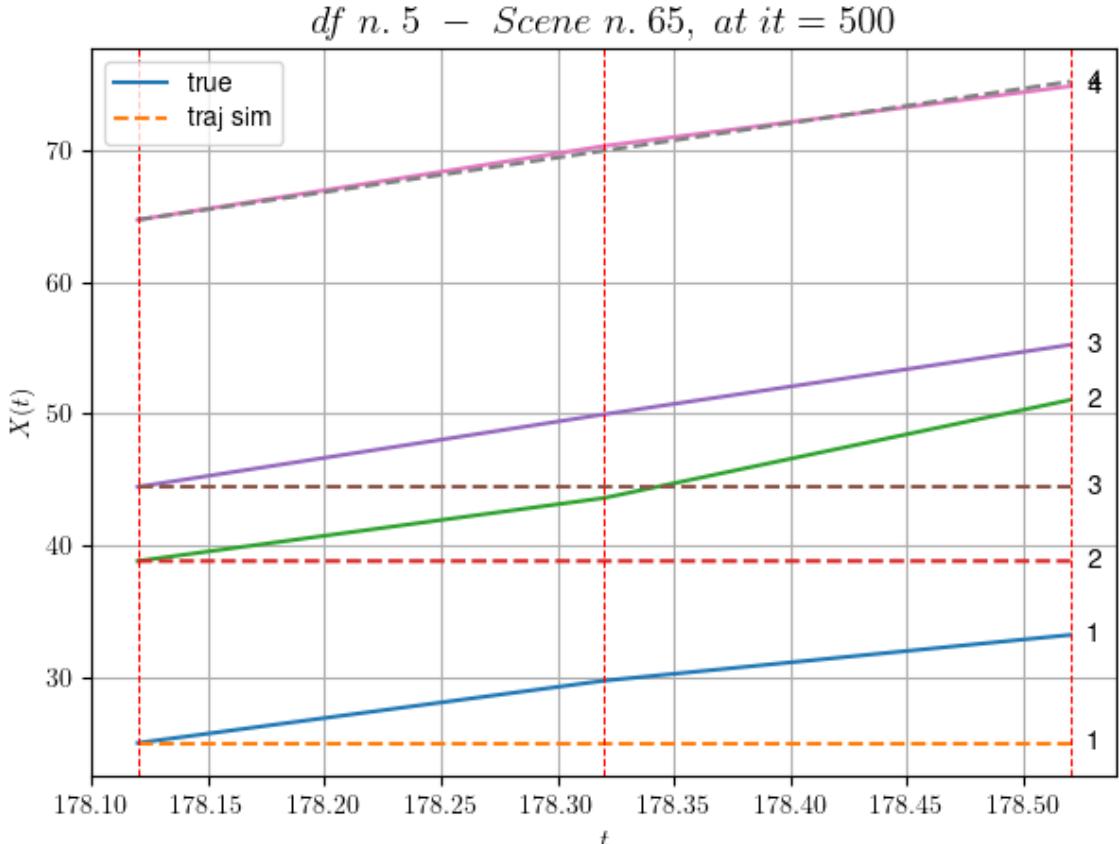
- Time interval n.1: [178.32, 178.52]
  - \* y\_true: [17.35034213 37.1766426 26.34131635]
  - \* v\_ann: [-4.318206903164423e-10, -3.44318395946174 86e-05, -3.231292119184985e-14, 26.19236210839535]

---



---

- \* err= 33.95885647174684
- \* Learning rate NN = 0.00036449998151510954
- \* diff = 4.4171695634531716e-07



For scene 65/66

- \* use LR\_NN=0.0005 with err=7.101171408042416 at it=24
- \* v0\_scn\_mean = 26.49696074916676
- \* MAE = 33.95885647174684

---



---

For df=5 with 66 scenes, time taken: 992.61

---



---



---



---

In df n.6/10 we have 52 scenes  
df n.6, scene n.0/52

---



---

We have 4 time intervals inside [14.80, 15.60]  
 - Time interval n.0: [14.80, 15.00]  
   \* y\_true: [23.20069976]  
   \* v\_ann: [24.132795333862305, 29.057098132173127]

---



---

- Time interval n.1: [15.00, 15.20]  
   \* y\_true: [27.66107981]  
   \* v\_ann: [25.96422004699707, 29.057098132173127]

---



---

- Time interval n.2: [15.20, 15.40]  
   \* y\_true: [25.57123034]

```
* v_ann: [26.857654571533203, 29.057098132173127]
```

---

```
- Time interval n.3: [15.40, 15.60]
```

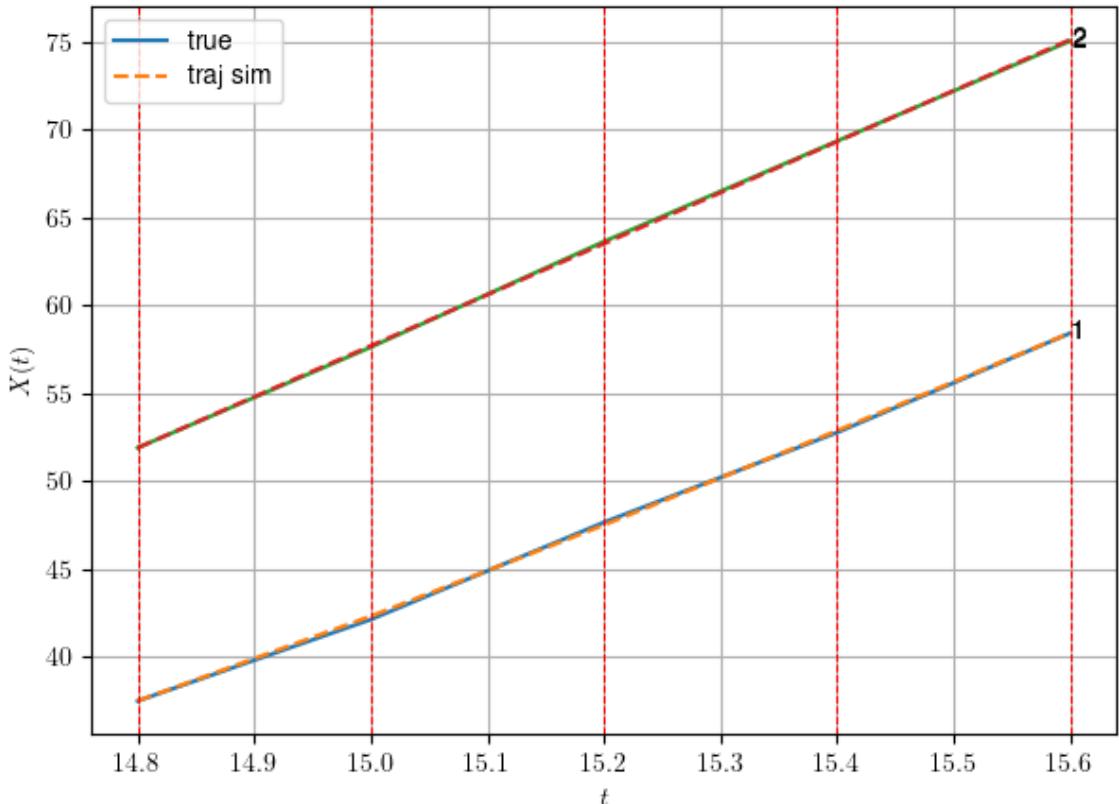
```
* y_true: [28.30168647]
```

```
* v_ann: [27.83534049987793, 29.057098132173127]
```

---

```
* err= 0.009791511821527762
* Learning rate NN = 2.3914839403005317e-05
* diff = 4.1303540576770326e-06
```

*df n. 6 – Scene n. 0, at it = 500*



For scene 0/52

```
* use LR_NN=5e-05 with err=0.11884113000094242 at it=24
```

```
* v0_scn_mean = 29.094814206878993
```

```
* MAE = 0.009766655551955862
```

---



---



---

df n.6, scene n.1/52

---



---



---

We have 9 time intervals inside [24.60, 26.40]

```
- Time interval n.0: [24.60, 24.80]
```

```
* y_true: [17.23002109]
```

```
* v_ann: [21.288103103637695, 20.072543725791633]
```

---



---



---

```
- Time interval n.1: [24.80, 25.00]
```

```
* y_true: [20.13005018]
* v_ann: [21.220613479614258, 20.072543725791633]

- Time interval n.2: [25.00, 25.20]
* y_true: [20.48009455]
* v_ann: [20.64289665222168, 20.072543725791633]

- Time interval n.3: [25.20, 25.40]
* y_true: [20.58014827]
* v_ann: [20.505844116210938, 20.072543725791633]

- Time interval n.4: [25.40, 25.60]
* y_true: [21.06023013]
* v_ann: [20.591365814208984, 20.072543725791633]

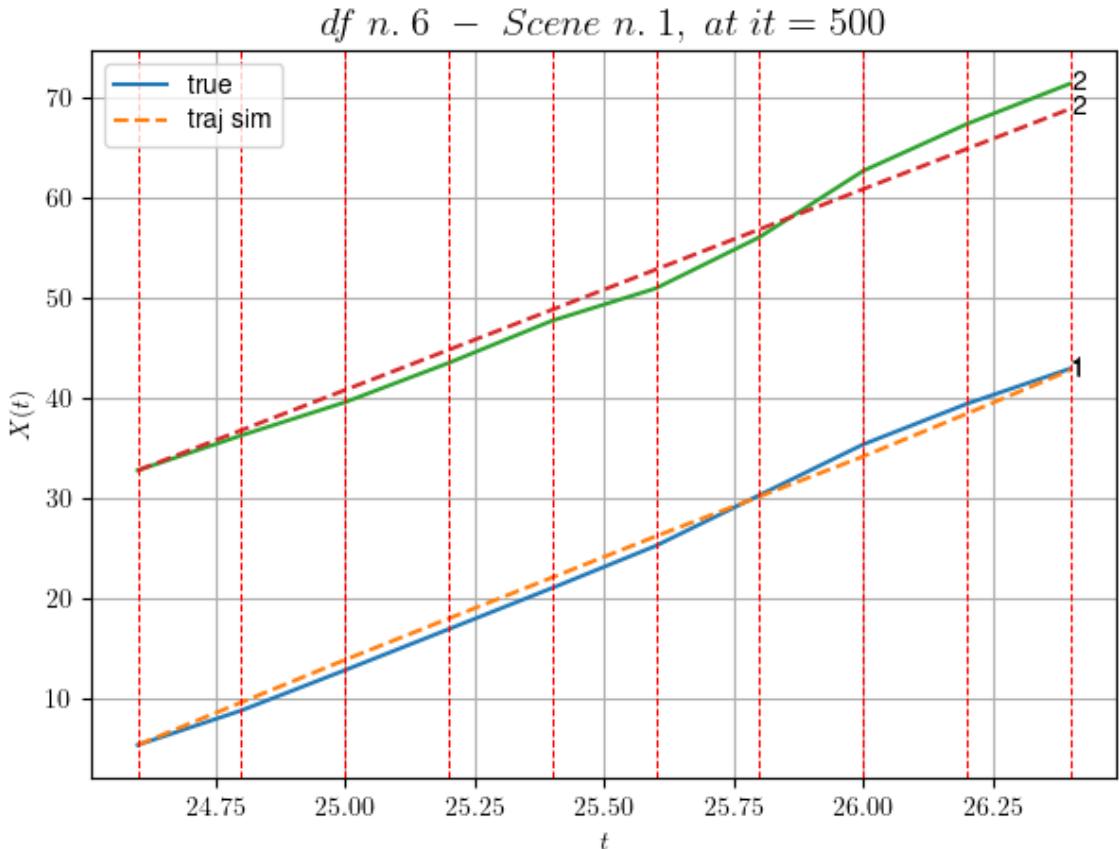
- Time interval n.5: [25.60, 25.80]
* y_true: [25.31039356]
* v_ann: [19.841936111450195, 20.072543725791633]

- Time interval n.6: [25.80, 26.00]
* y_true: [25.32053085]
* v_ann: [20.004905700683594, 20.072543725791633]

- Time interval n.7: [26.00, 26.20]
* y_true: [20.28057024]
* v_ann: [21.3436279296875, 20.072543725791633]

- Time interval n.8: [26.20, 26.40]
* y_true: [17.62559467]
* v_ann: [21.808086395263672, 20.072543725791633]

* err= 1.5990896098149538
* Learning rate NN = 8.338586667377967e-06
* diff = 0.0001410117465838745
```



For scene 1/52

- \* use LR\_NN=5e-05 with err=51.84968028725324 at it=24
- \* v0\_scn\_mean = 20.469641976684112
- \* MAE = 1.4345583657296885

---



---

df n.6, scene n.2/52

---



---

We have 5 time intervals inside [29.80, 30.80]

- Time interval n.0: [29.80, 30.00]
  - \* y\_true: [20.15002211]
  - \* v\_ann: [17.793073654174805, 24.207929046504976]

---

- Time interval n.1: [30.00, 30.20]
  - \* y\_true: [22.29006024]
  - \* v\_ann: [19.96022605895996, 24.207929046504976]

---

- Time interval n.2: [30.20, 30.40]
  - \* y\_true: [20.82009504]
  - \* v\_ann: [21.37026023864746, 24.207929046504976]

---

- Time interval n.3: [30.40, 30.60]
  - \* y\_true: [16.41012173]

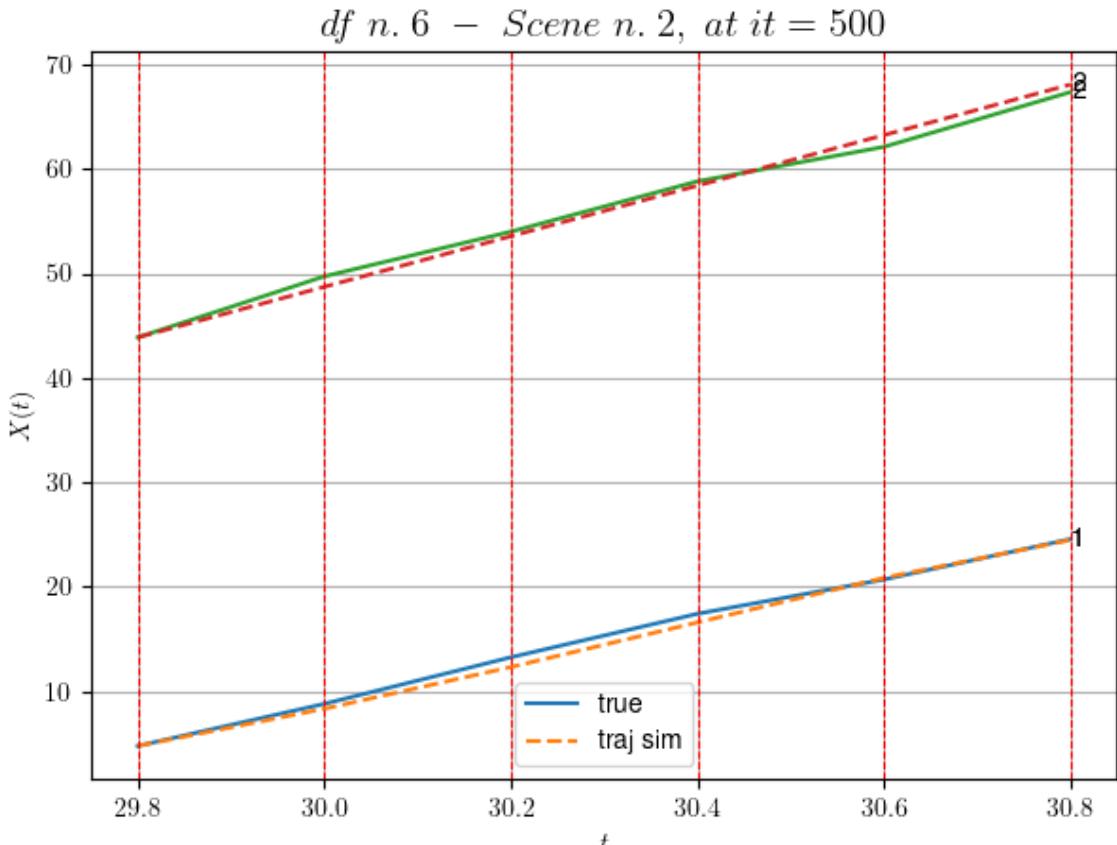
```
* v_ann: [21.33509063720703, 24.207929046504976]
```

---

```
- Time interval n.4: [30.60, 30.80]
* y_true: [19.34020007]
* v_ann: [18.10446548461914, 24.207929046504976]
```

---

```
* err= 0.4145068423379332
* Learning rate NN = 0.0001937102060765028
* diff = 0.007373142890151008
```



For scene 2/52

```
* use LR_NN=0.0005 with err=7.43920293452678 at it=24
* v0_scn_mean = 24.439611884600513
* MAE = 0.3280670613063993
```

---



---

df n.6, scene n.3/52

---



---

We have 5 time intervals inside [31.80,32.80]

```
- Time interval n.0: [31.80, 32.00]
* y_true: [28.45012265]
* v_ann: [33.54247283935547, 21.080205380799686]
```

---

```
- Time interval n.1: [32.00, 32.20]
```

```
* y_true: [30.25025199]
* v_ann: [30.780517578125, 21.080205380799686]
```

---

```
- Time interval n.2: [32.20, 32.40]
* y_true: [30.60042484]
* v_ann: [29.631797790527344, 21.080205380799686]
```

---

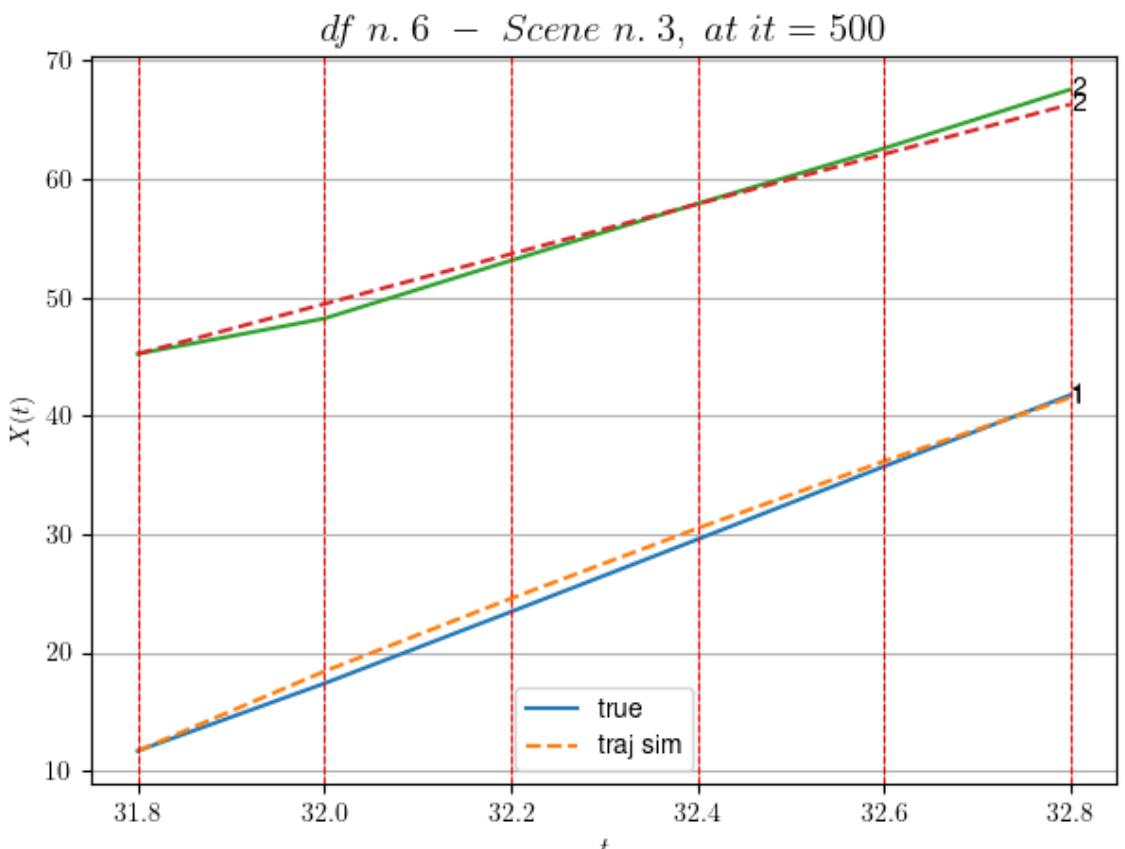
```
- Time interval n.3: [32.40, 32.60]
* y_true: [30.80064449]
* v_ann: [28.345073699951172, 21.080205380799686]
```

---

```
- Time interval n.4: [32.60, 32.80]
* y_true: [30.20103326]
* v_ann: [26.900548934936523, 21.080205380799686]
```

---

```
* err= 0.5879982536805685
* Learning rate NN = 3.874203684972599e-06
* diff = 0.00029697378416426723
```



For scene 3/52

```
* use LR_NN=1e-05 with err=13.32622114483877 at it=24
* v0_scn_mean = 21.436997165499537
* MAE = 0.5355078138625465
```

```
df n.6, scene n.4/52
```

```
=====
=====
```

We have 5 time intervals inside [66.40,67.40]  
- Time interval n.0: [66.40, 66.60]  
  \* y\_true: [31.42032719]  
  \* v\_ann: [30.973350524902344, 29.946012102239596]

```


```

- Time interval n.1: [66.60, 66.80]  
  \* y\_true: [25.99042753]  
  \* v\_ann: [29.962646484375, 29.946012102239596]

```


```

- Time interval n.2: [66.80, 67.00]  
  \* y\_true: [29.58069783]  
  \* v\_ann: [29.376928329467773, 29.946012102239596]

```


```

- Time interval n.3: [67.00, 67.20]  
  \* y\_true: [34.44110525]  
  \* v\_ann: [29.49364471435547, 29.946012102239596]

```

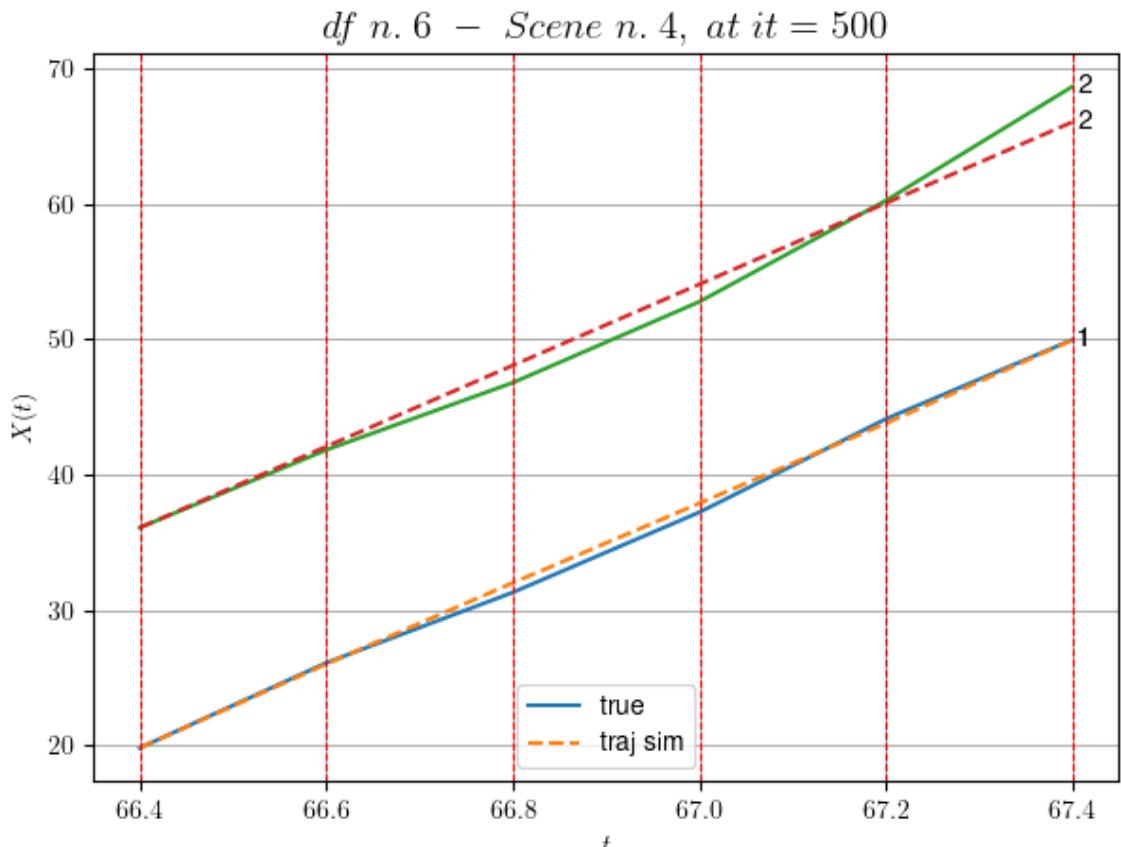

```

- Time interval n.4: [67.20, 67.40]  
  \* y\_true: [29.24127853]  
  \* v\_ann: [30.772912979125977, 29.946012102239596]

```


```

\* err= 0.9416029098371287  
\* Learning rate NN = 1.9371018424862996e-05  
\* diff = 0.0002699745600395209



For scene 4/52

- \* use LR\_NN=5e-05 with err=0.9334636815414125 at it=24
  - \* v0\_scn\_mean = 29.948171618149587
  - \* MAE = 0.9317301904375679
- 
- 

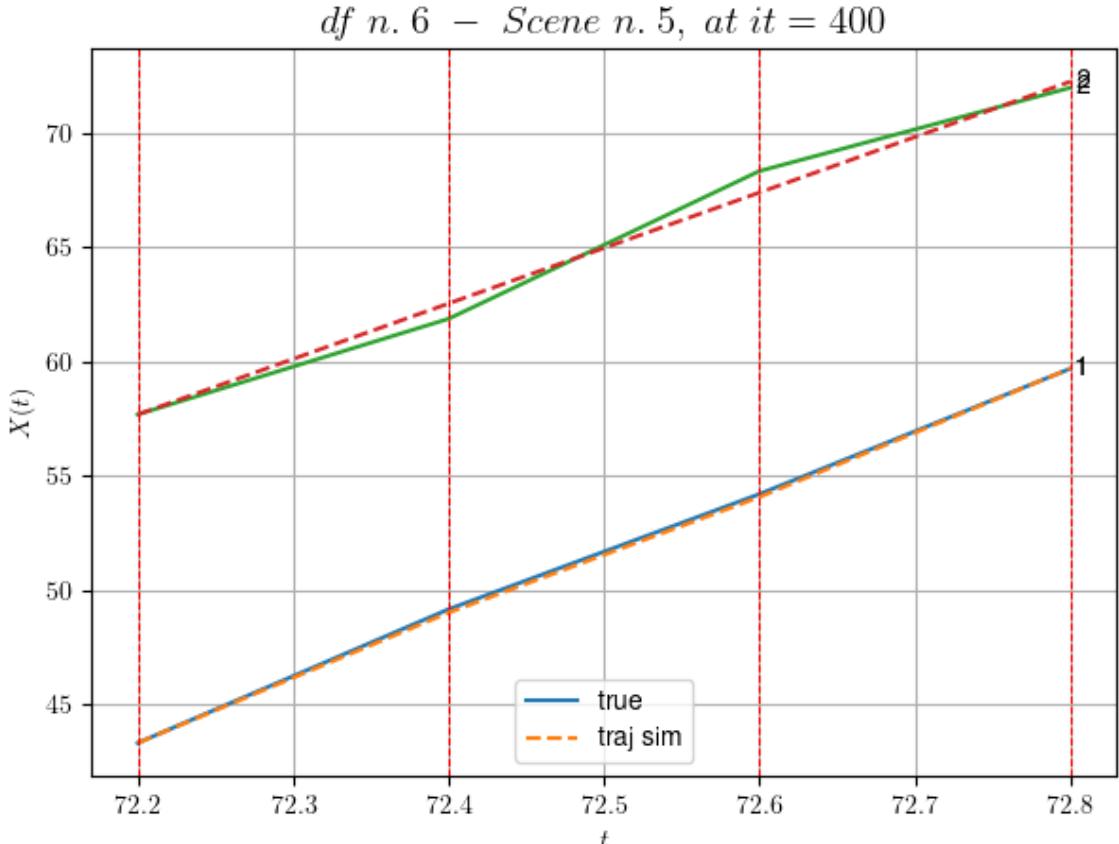
df n.6, scene n.5/52

---

---

We have 3 time intervals inside [72.20, 72.80]

- \* err= 0.18049356217341492
- \* Learning rate NN = 6.560998735949397e-05
- \* diff = 5.161287354171762e-07



For scene 5/52

- \* use LR\_NN=0.0001 with err=2.3574316530284105 at it=24
- \* v0\_scn\_mean = 24.56545097784474
- \* MAE = 0.17934461544547492

---



---

df n.6, scene n.6/52

---



---

We have 7 time intervals inside [73.80, 75.20]

- Time interval n.0: [73.80, 74.00]
  - \* y\_true: [20.58483588]
  - \* v\_ann: [20.243921279907227, 22.20554837243087]

---

- Time interval n.1: [74.00, 74.20]
  - \* y\_true: [12.25168131]
  - \* v\_ann: [20.084680557250977, 22.20554837243087]

---

- Time interval n.2: [74.20, 74.40]
  - \* y\_true: [25.70645636]
  - \* v\_ann: [18.610992431640625, 22.20554837243087]

---

- Time interval n.3: [74.40, 74.60]
  - \* y\_true: [26.87686349]

```
* v_ann: [20.58272933959961, 22.20554837243087]
```

---

```
- Time interval n.4: [74.60, 74.80]
* y_true: [24.24024871]
* v_ann: [22.60615348815918, 22.20554837243087]
```

---

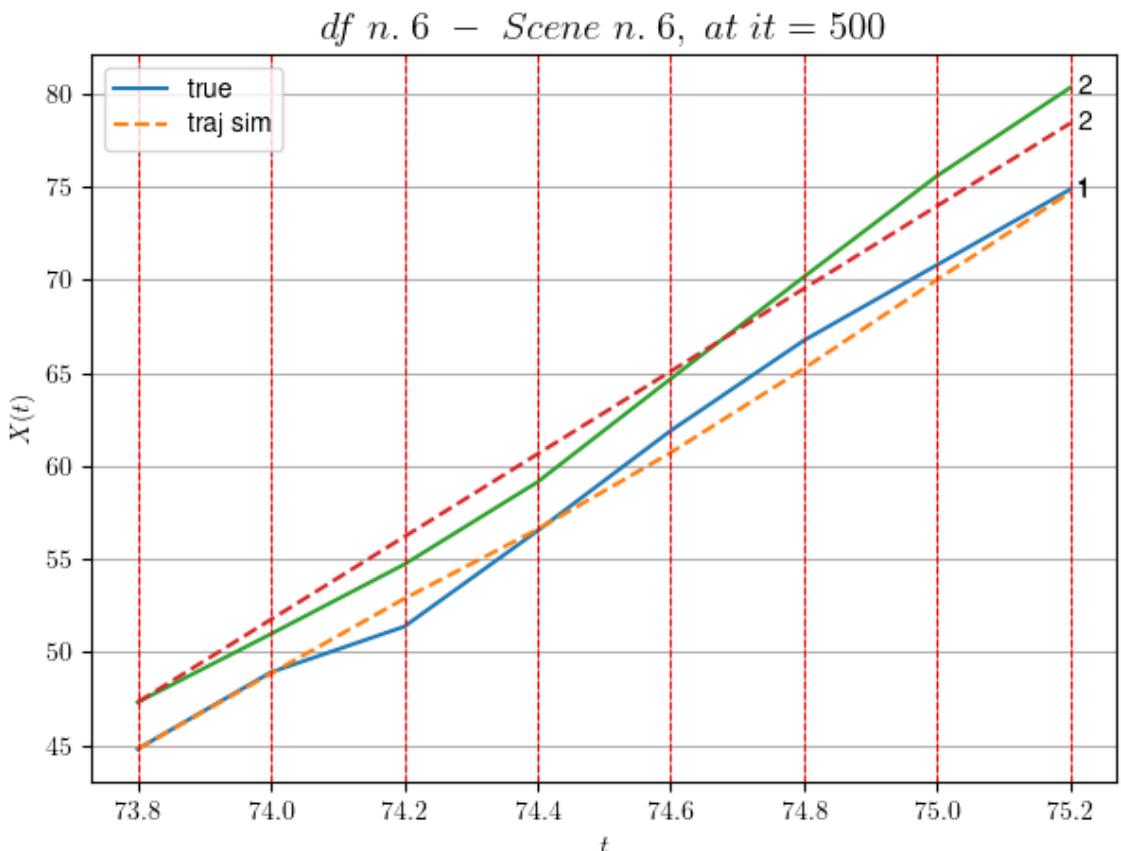
```
- Time interval n.5: [74.80, 75.00]
* y_true: [20.28532654]
* v_ann: [23.862751007080078, 22.20554837243087]
```

---

```
- Time interval n.6: [75.00, 75.20]
* y_true: [20.28532654]
* v_ann: [23.465843200683594, 22.20554837243087]
```

---

```
* err= 1.1541494077120091
* Learning rate NN = 0.0012709323782473803
* diff = 0.02671892395554476
```



For scene 6/52

```
* use LR_NN=0.005 with err=20.42578552008937 at it=24
* v0_scn_mean = 22.51732643747374
* MAE = 1.1541494077120091
```

```
df n.6, scene n.7/52
```

---



---

We have 4 time intervals inside [86.60, 87.40]

- Time interval n.0: [86.60, 86.80]

- \* y\_true: [8.95018469]

- \* v\_ann: [11.608892440795898, 28.176915163685493]

---

- Time interval n.1: [86.80, 87.00]

- \* y\_true: [11.65030459]

- \* v\_ann: [10.356678009033203, 28.176915163685493]

---

- Time interval n.2: [87.00, 87.20]

- \* y\_true: [11.65030459]

- \* v\_ann: [9.643916130065918, 28.176915163685493]

---

- Time interval n.3: [87.20, 87.40]

- \* y\_true: [8.51695204]

- \* v\_ann: [9.663529396057129, 28.176915163685493]

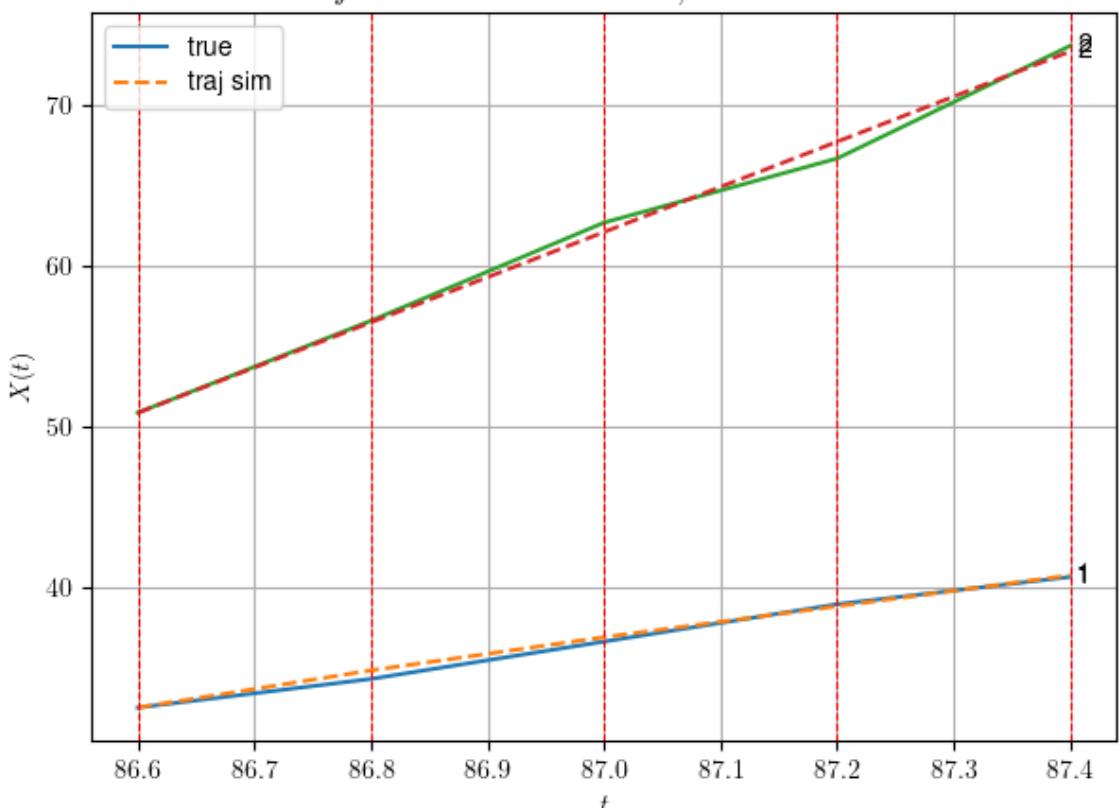
---

- \* err= 0.19578761431414543

- \* Learning rate NN = 2.3914839403005317e-05

- \* diff = 0.0005987977808573075

*df n. 6 – Scene n. 7, at it = 500*



For scene 7/52

```
* use LR_NN=5e-05 with err=0.7100434361724831 at it=24
* v0_scn_mean = 28.249838557124924
* MAE = 0.19578761431414543
```

```
=====
```

df n.6, scene n.8/52

```
=====
```

```
We have 7 time intervals inside [99.40,100.80]
- Time interval n.0: [99.40, 99.60]
 * y_true: [26.75071408]
 * v_ann: [26.46928596496582, 20.17230192739079]
```

```
- Time interval n.1: [99.60, 99.80]
 * y_true: [25.15087073]
 * v_ann: [25.14788818359375, 20.17230192739079]
```

```
- Time interval n.2: [99.80, 100.00]
 * y_true: [14.1505841]
 * v_ann: [23.825448989868164, 20.17230192739079]
```

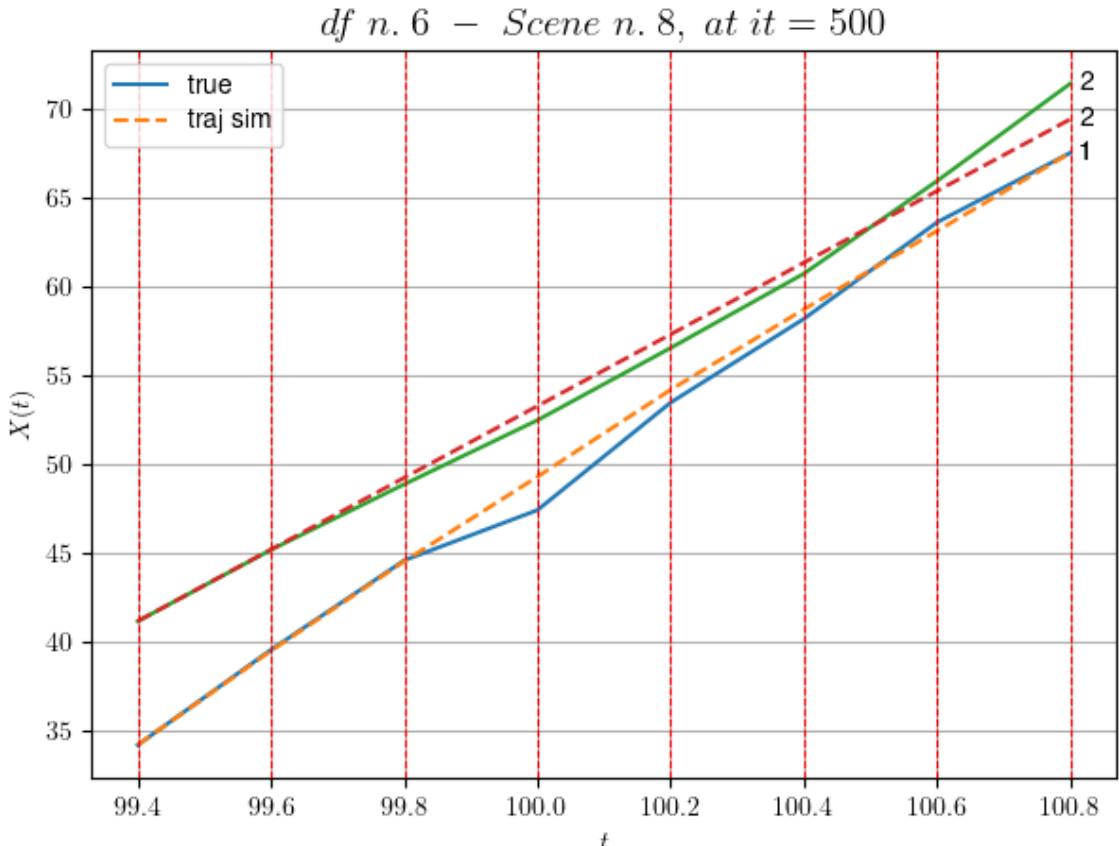
```
- Time interval n.3: [100.00, 100.20]
 * y_true: [30.25150056]
 * v_ann: [24.4631290435791, 20.17230192739079]
```

```
- Time interval n.4: [100.20, 100.40]
 * y_true: [23.55142746]
 * v_ann: [22.609107971191406, 20.17230192739079]
```

```
- Time interval n.5: [100.40, 100.60]
 * y_true: [27.15195588]
 * v_ann: [22.094350814819336, 20.17230192739079]
```

```
- Time interval n.6: [100.60, 100.80]
 * y_true: [19.55162977]
 * v_ann: [21.91094970703125, 20.17230192739079]
```

```
* err= 0.6646318860790886
* Learning rate NN = 2.5418647055630572e-05
* diff = 0.0004223752439719286
```



For scene 8/52

\* use LR\_NN=0.0001 with err=34.23475429870411 at it=24  
\* v0\_scn\_mean = 20.565409850220078  
\* MAE = 0.6418327001249784

---

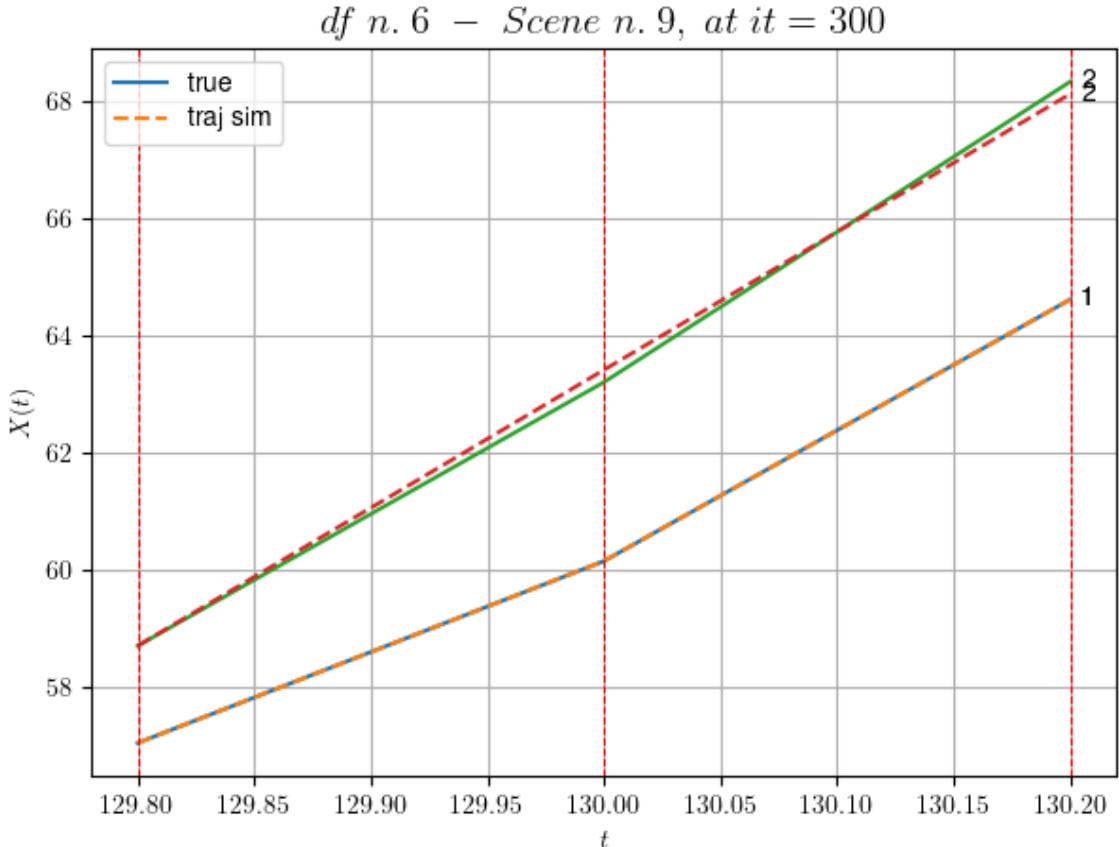
---

df n.6, scene n.9/52

---

---

We have 2 time intervals inside [129.80,130.20]  
\* err= 0.014705006576337882  
\* Learning rate NN = 0.008099999278783798  
\* diff = 2.220536608615875e-07



For scene 9/52

- \* use LR\_NN=0.01 with err=1.290591654546053 at it=24
- \* v0\_scn\_mean = 24.02837731377122
- \* MAE = 0.013235109409541798

---



---

df n.6, scene n.10/52

---



---

We have 8 time intervals inside [131.80, 133.40]

- Time interval n.0: [131.80, 132.00]
  - \* y\_true: [0.35723721]
  - \* v\_ann: [1.6412136554718018, 20.22300032377142]

---

- Time interval n.1: [132.00, 132.20]
  - \* y\_true: [0.35723721]
  - \* v\_ann: [2.059135913848877, 20.22300032377142]

---

- Time interval n.2: [132.20, 132.40]
  - \* y\_true: [0.35723721]
  - \* v\_ann: [2.6729953289031982, 20.22300032377142]

---

- Time interval n.3: [132.40, 132.60]
  - \* y\_true: [0.35723721]

```
* v_ann: [3.3021390438079834, 20.22300032377142]
```

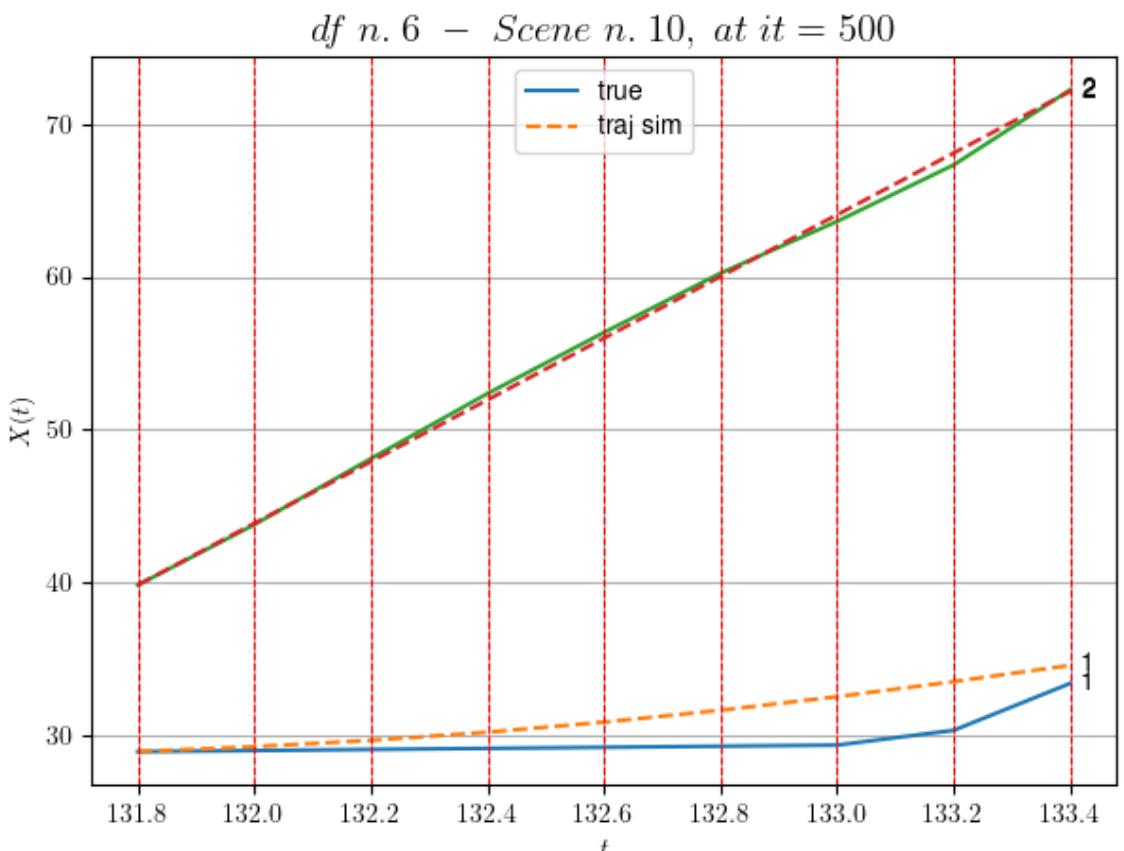
```
- Time interval n.4: [132.60, 132.80]
* y_true: [0.35723721]
* v_ann: [3.891430616378784, 20.22300032377142]
```

```
- Time interval n.5: [132.80, 133.00]
* y_true: [0.35723721]
* v_ann: [4.45461368560791, 20.22300032377142]
```

```
- Time interval n.6: [133.00, 133.20]
* y_true: [4.8519049]
* v_ann: [4.932678699493408, 20.22300032377142]
```

```
- Time interval n.7: [133.20, 133.40]
* y_true: [15.39029942]
* v_ann: [5.34550142288208, 20.22300032377142]
```

```
* err= 1.8166951665901343
* Learning rate NN = 1.029455233947374e-05
* diff = 0.00699371369406121
```



For scene 10/52

\* use LR\_NN=5e-05 with err=45.27113979158075 at it=24

```
* vθ_scn_mean = 20.614080310746843
* MAE = 1.8166951665901343
```

```
=====
```

```
=====
```

```
df n.6, scene n.11/52
```

```
=====
```

```
=====
```

```
We have 6 time intervals inside [134.00,135.20]
```

```
- Time interval n.0: [134.00, 134.20]
 * y_true: [0.35723721]
 * v_ann: [0.8669365644454956, 22.06323233551294]
```

```

- Time interval n.1: [134.20, 134.40]
 * y_true: [0.35723721]
 * v_ann: [0.24621936678886414, 22.06323233551294]
```

```

- Time interval n.2: [134.40, 134.60]
 * y_true: [0.35723721]
 * v_ann: [0.10021569579839706, 22.06323233551294]
```

```

- Time interval n.3: [134.60, 134.80]
 * y_true: [0.35723721]
 * v_ann: [0.04134554788470268, 22.06323233551294]
```

```

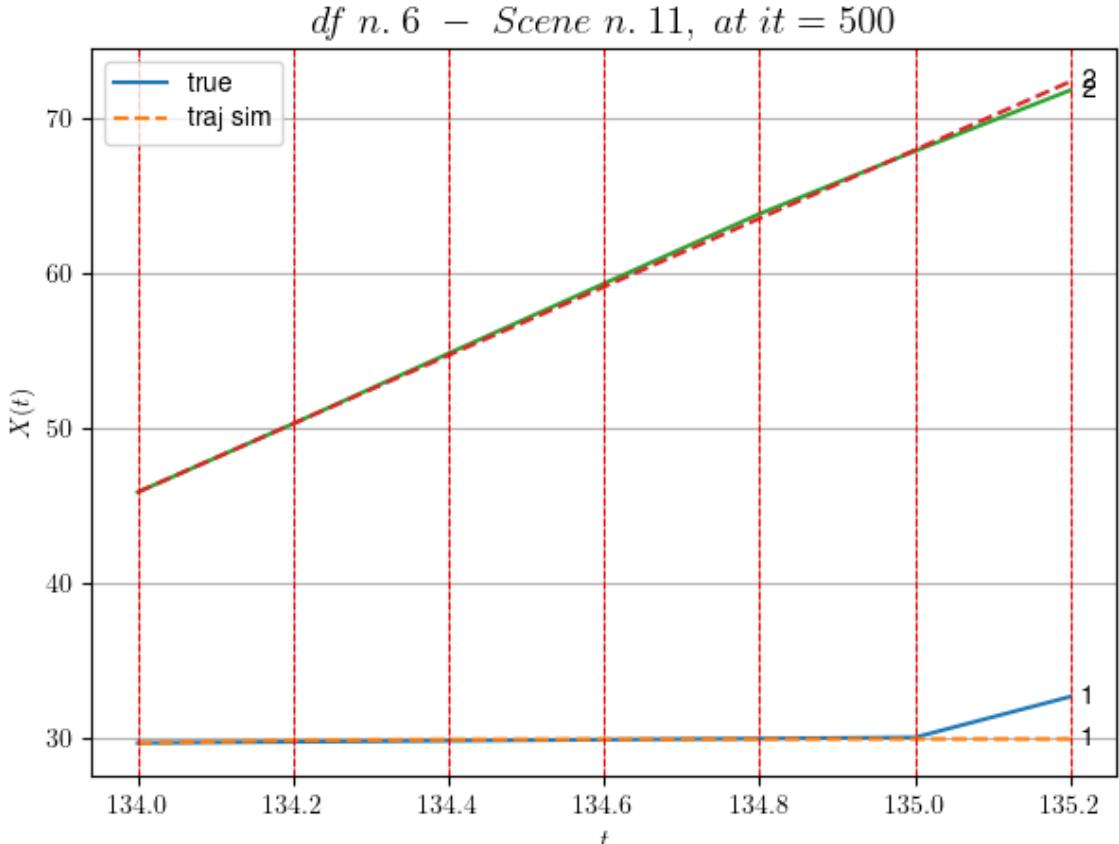
- Time interval n.4: [134.80, 135.00]
 * y_true: [0.35723721]
 * v_ann: [0.01652674749493599, 22.06323233551294]
```

```

- Time interval n.5: [135.00, 135.20]
 * y_true: [13.1611551]
 * v_ann: [0.007083324249833822, 22.06323233551294]
```

```

* err= 0.5689488875254387
* Learning rate NN = 0.0031381049193441868
* diff = 0.011574595407052746
```



For scene 11/52

- \* use LR\_NN=0.01 with err=17.44173785245837 at it=24
- \* v0\_scn\_mean = 22.380703042032202
- \* MAE = 0.4999600998985805

---



---

df n.6, scene n.12/52

---



---

We have 10 time intervals inside [139.40, 141.40]

- Time interval n.0: [139.40, 139.60]
  - \* y\_true: [0.35723721]
  - \* v\_ann: [-2.1635351181030273, 17.7770898385059]

---

- Time interval n.1: [139.60, 139.80]
  - \* y\_true: [0.35723721]
  - \* v\_ann: [-0.8728551864624023, 17.7770898385059]

---

- Time interval n.2: [139.80, 140.00]
  - \* y\_true: [0.35723721]
  - \* v\_ann: [0.3062596917152405, 17.7770898385059]

---

- Time interval n.3: [140.00, 140.20]
  - \* y\_true: [0.35723721]

```
* v_ann: [1.990623116493225, 17.7770898385059]
```

```
- Time interval n.4: [140.20, 140.40]
* y_true: [0.35723721]
* v_ann: [3.419771671295166, 17.7770898385059]
```

```
- Time interval n.5: [140.40, 140.60]
* y_true: [0.35723721]
* v_ann: [4.272439002990723, 17.7770898385059]
```

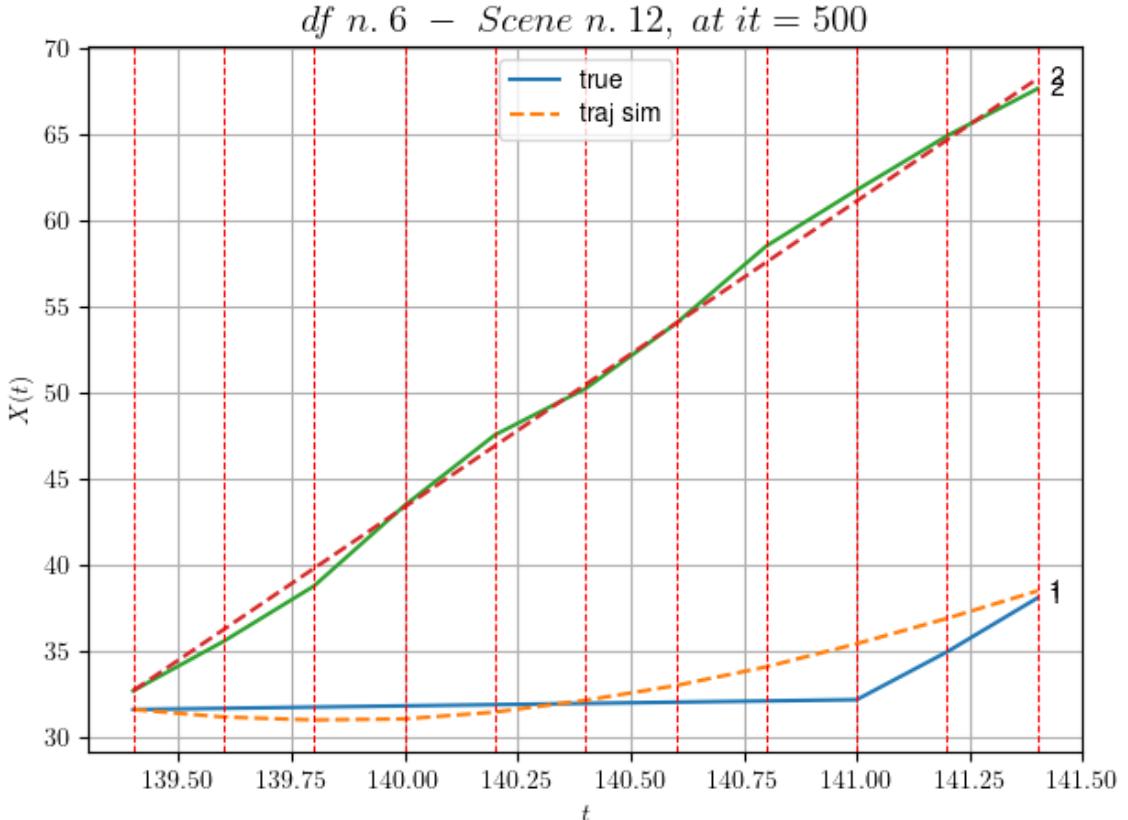
```
- Time interval n.6: [140.60, 140.80]
* y_true: [0.35723721]
* v_ann: [5.440093517303467, 17.7770898385059]
```

```
- Time interval n.7: [140.80, 141.00]
* y_true: [0.35723721]
* v_ann: [6.717264652252197, 17.7770898385059]
```

```
- Time interval n.8: [141.00, 141.20]
* y_true: [13.90289768]
* v_ann: [7.375920295715332, 17.7770898385059]
```

```
- Time interval n.9: [141.20, 141.40]
* y_true: [15.67039873]
* v_ann: [7.971771240234375, 17.7770898385059]
```

```
* err= 1.1199722419058278
* Learning rate NN = 6.754255082341842e-06
* diff = 0.04298472071480375
```



For scene 12/52

- \* use LR\_NN=5e-05 with err=105.2715389992941 at it=24
- \* v0\_scn\_mean = 18.266006244872337
- \* MAE = 1.1185961207165307

---



---

df n.6, scene n.13/52

---



---

We have 12 time intervals inside [147.60,150.00]

- Time interval n.0: [147.60, 147.80]

- \* y\_true: [15.36027953]

- \* v\_ann: [-8.341262258682036e-08, 11.91404619934145]

6]

---



---

- Time interval n.1: [147.80, 148.00]

- \* y\_true: [13.26997227]

- \* v\_ann: [-0.00037401143345050514, 11.91404619934144]

56]

---



---

- Time interval n.2: [148.00, 148.20]

- \* y\_true: [0.35723721]

- \* v\_ann: [-0.32418951392173767, 11.914046199341456]

---



---

- Time interval n.3: [148.20, 148.40]

```
* y_true: [0.35723721]
* v_ann: [-5.668302037520334e-05, 11.91404619934145
6]

- Time interval n.4: [148.40, 148.60]
* y_true: [0.35723721]
* v_ann: [-7.360529519218062e-09, 11.91404619934145
6]

- Time interval n.5: [148.60, 148.80]
* y_true: [0.35723721]
* v_ann: [-5.441606908997143e-13, 11.91404619934145
6]

- Time interval n.6: [148.80, 149.00]
* y_true: [0.35723721]
* v_ann: [-2.7634322518357215e-17, 11.9140461993414
56]

- Time interval n.7: [149.00, 149.20]
* y_true: [0.35723721]
* v_ann: [-1.94772074856863e-21, 11.91404619934145
6]

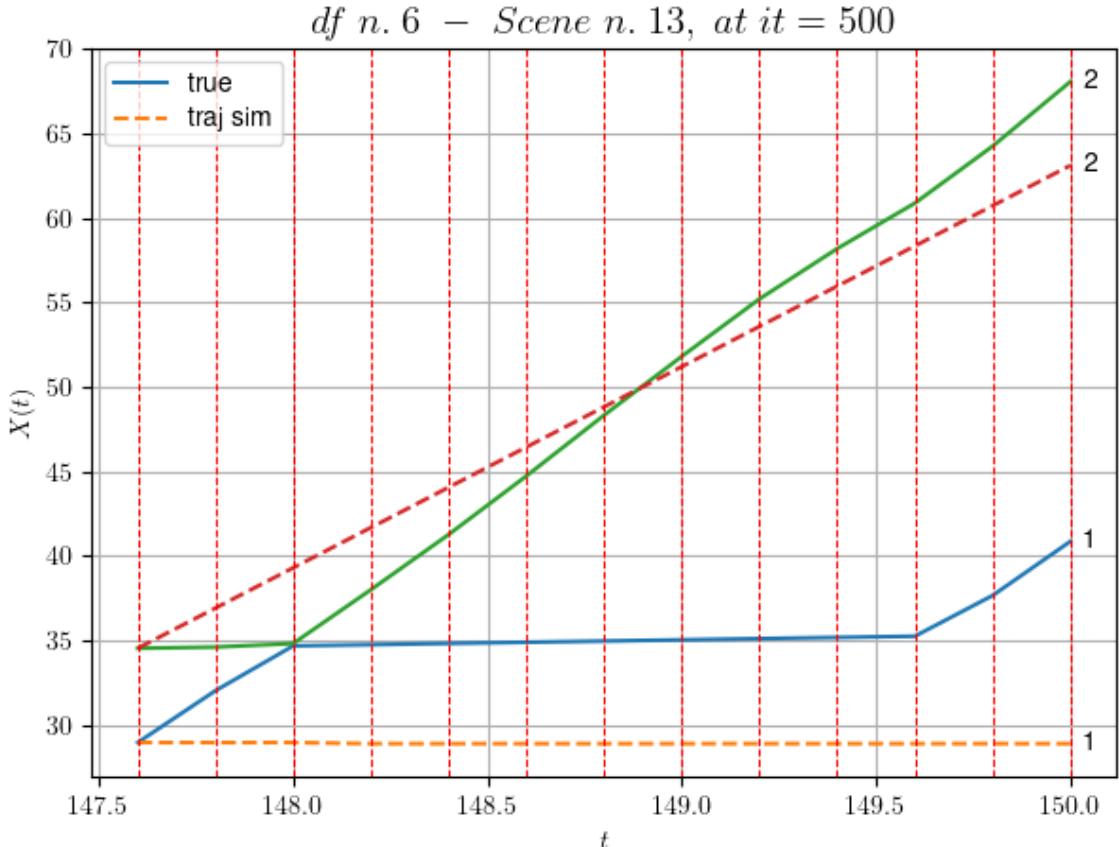
- Time interval n.8: [149.20, 149.40]
* y_true: [0.35723721]
* v_ann: [-1.7080756516110724e-25, 11.9140461993414
56]

- Time interval n.9: [149.40, 149.60]
* y_true: [0.35723721]
* v_ann: [-4.9421312377045164e-29, 11.9140461993414
56]

- Time interval n.10: [149.60, 149.80]
* y_true: [12.05341143]
* v_ann: [-3.1691245413564314e-32, 11.9140461993414
56]

- Time interval n.11: [149.80, 150.00]
* y_true: [16.0154952]
* v_ann: [-2.1536074044361738e-33, 11.9140461993414
56]
```

```
* err= 25.504803627263257
* Learning rate NN = 0.000443146622274071
* diff = 0.018357498697611163
```



For scene 13/52

```
* use LR_NN=0.005 with err=300.43392093656473 at it=24
* v0_scn_mean = 12.637484351229727
* MAE = 6.910856995644005
```

---



---

df n.6, scene n.14/52

---



---

We have 7 time intervals inside [162.20,163.60]

- Time interval n.0: [162.20, 162.40]
  - \* y\_true: [0.35723721]
  - \* v\_ann: [-0.6251582503318787, 21.059787487615633]

---



---

33]

---



---

- Time interval n.1: [162.40, 162.60]
  - \* y\_true: [0.35723721]
  - \* v\_ann: [-3.6151366202830104e-06, 21.0597874876156]

---



---

- Time interval n.2: [162.60, 162.80]
  - \* y\_true: [0.35723721]

```
* v_ann: [-7.060652063017869e-11, 21.0597874876156
3]

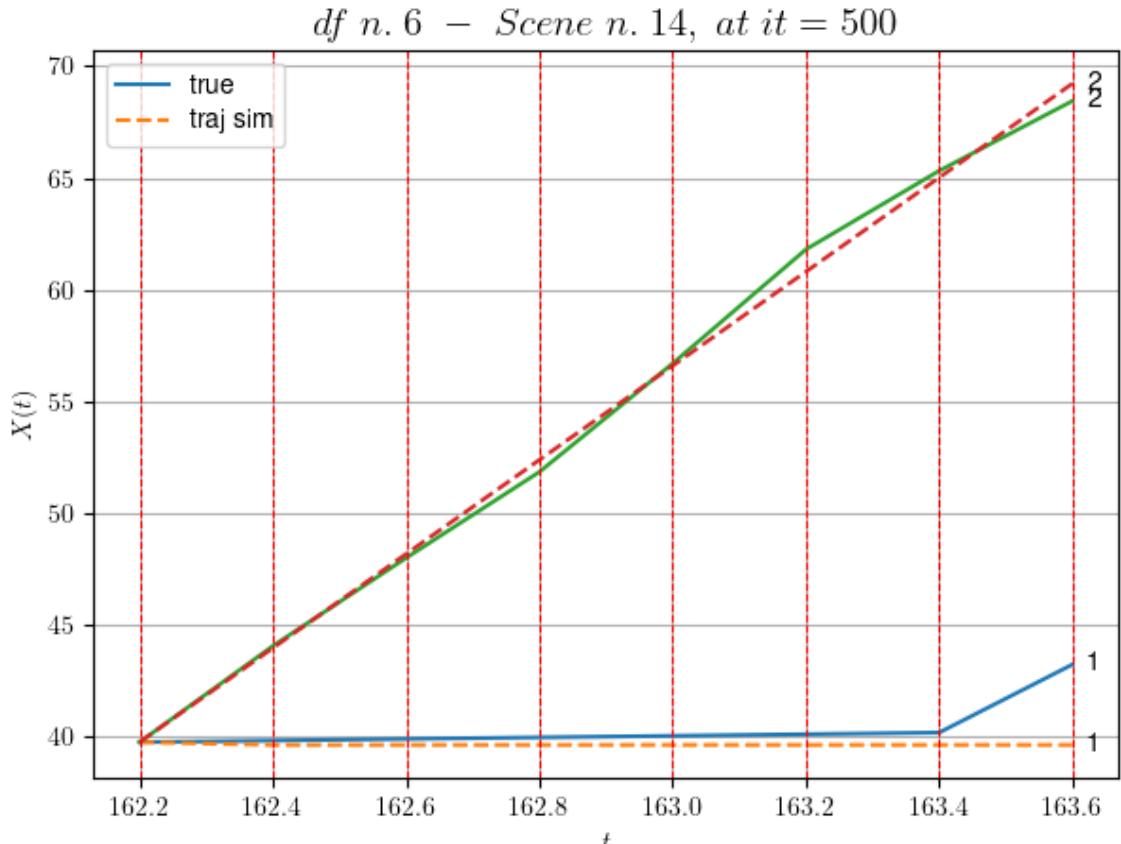
- Time interval n.3: [162.80, 163.00]
* y_true: [0.35723721]
* v_ann: [-1.7794974258104326e-15, 21.0597874876156
33]

- Time interval n.4: [163.00, 163.20]
* y_true: [0.35723721]
* v_ann: [-2.6901605847747213e-21, 21.0597874876156
33]

- Time interval n.5: [163.20, 163.40]
* y_true: [0.35723721]
* v_ann: [-2.0126568808989263e-27, 21.0597874876156
33]

- Time interval n.6: [163.40, 163.60]
* y_true: [15.24493239]
* v_ann: [-1.2749206017507136e-31, 21.0597874876156
33]

* err= 0.9969304127662372
* Learning rate NN = 2.541864660088322e-06
* diff = 7.62881925848724e-05
```



For scene 14/52

\* use LR\_NN=1e-05 with err=28.505278851922824 at it=24  
\* v0\_scn\_mean = 21.4173959880427  
\* MAE = 0.9969304127662372

---

---

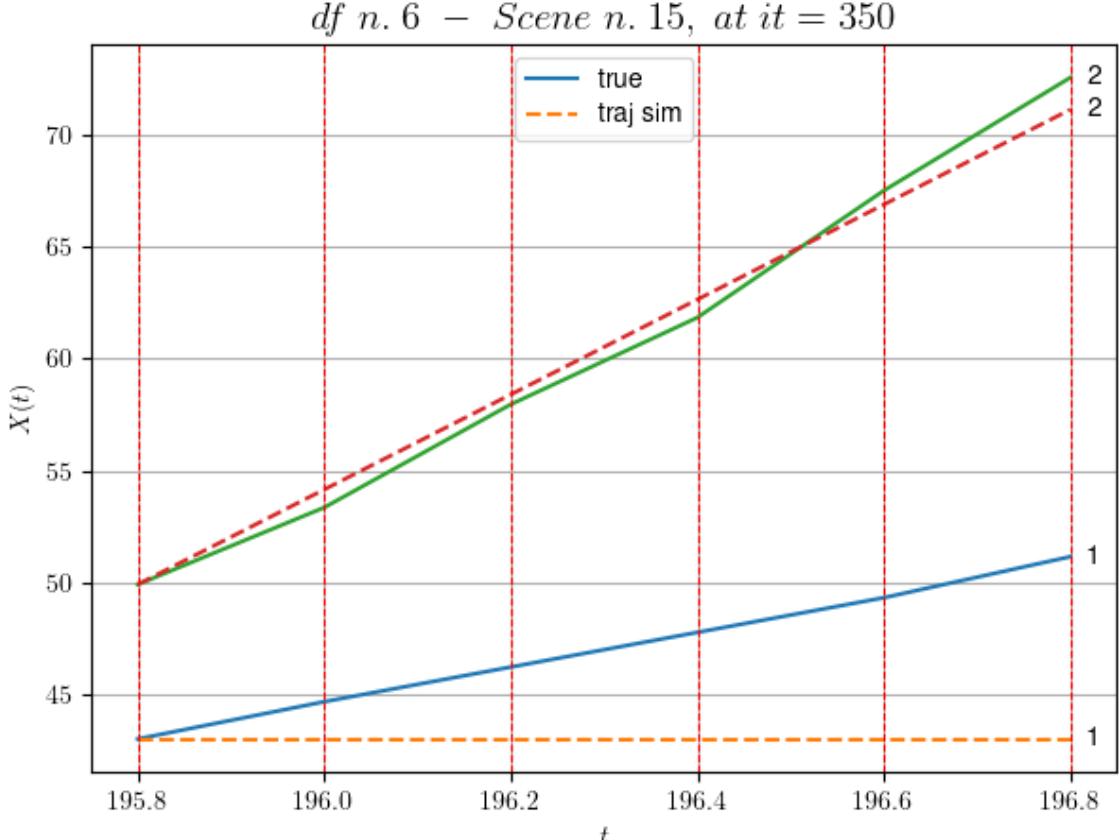
df n.6, scene n.15/52

---

---

We have 5 time intervals inside [195.80,196.80]

\* err= 12.17317695688746  
\* Learning rate NN = 0.000531440949998796  
\* diff = 3.083336963527472e-07



For scene 15/52

- \* use LR\_NN=0.001 with err=13.276371323641012 at it=24
- \* v0\_scn\_mean = 21.73807043612383
- \* MAE = 12.126771055347799

---



---

df n.6, scene n.16/52

---



---

We have 9 time intervals inside [204.40, 206.20]

- Time interval n.0: [204.40, 204.60]
  - \* y\_true: [8.31429106]
  - \* v\_ann: [-0.03958720341324806, 16.186070594949]

---

- Time interval n.1: [204.60, 204.80]
  - \* y\_true: [3.70012482]
  - \* v\_ann: [-0.0025079059414565563, 16.186070594949]

---

- Time interval n.2: [204.80, 205.00]
  - \* y\_true: [10.45040224]
  - \* v\_ann: [-2.8093254513805732e-06, 16.186070594949]

---

- Time interval n.3: [205.00, 205.20]
  - \* y\_true: [10.45040224]

```
* v_ann: [-2.9920596489318996e-07, 16.186070594949]
```

```


- Time interval n.4: [205.20, 205.40]
* y_true: [9.60043819]
* v_ann: [-2.0439108183722965e-09, 16.186070594949]
```

```


- Time interval n.5: [205.40, 205.60]
* y_true: [9.60043819]
* v_ann: [-1.3859319508008339e-12, 16.186070594949]
```

```


- Time interval n.6: [205.60, 205.80]
* y_true: [18.85713018]
* v_ann: [-3.680444214367376e-14, 16.186070594949]
```

```

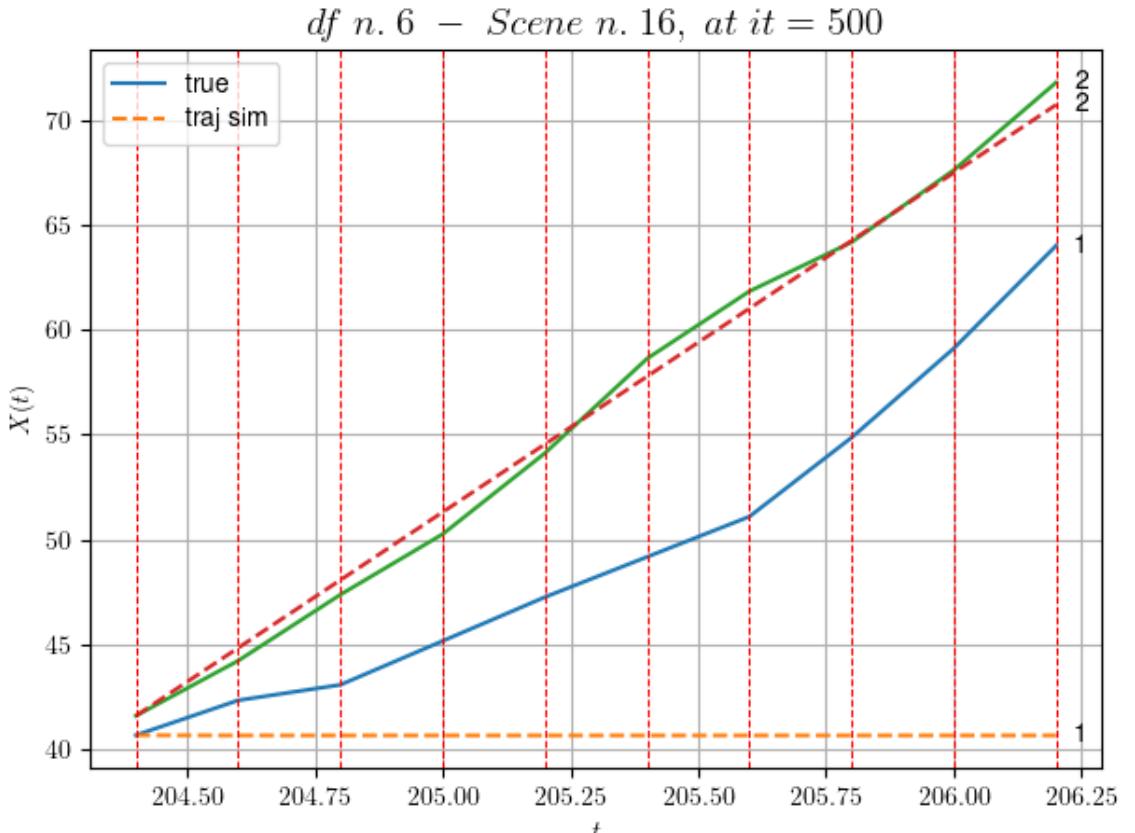

- Time interval n.7: [205.80, 206.00]
* y_true: [21.27628484]
* v_ann: [-2.0740837432947634e-12, 16.186070594949]
```

```


- Time interval n.8: [206.00, 206.20]
* y_true: [24.47691723]
* v_ann: [-2.0539013198539458e-11, 16.186070594949]
```

```


* err= 67.30467457135452
* Learning rate NN = 1.6677173334755935e-05
* diff = 8.127350969289182e-05
```



For scene 16/52

- \* use LR\_NN=0.0001 with err=106.16233969818342 at it=24
- \* v0\_scn\_mean = 16.738627771044992
- \* MAE = 67.27950214889425

---



---

df n.6, scene n.17/52

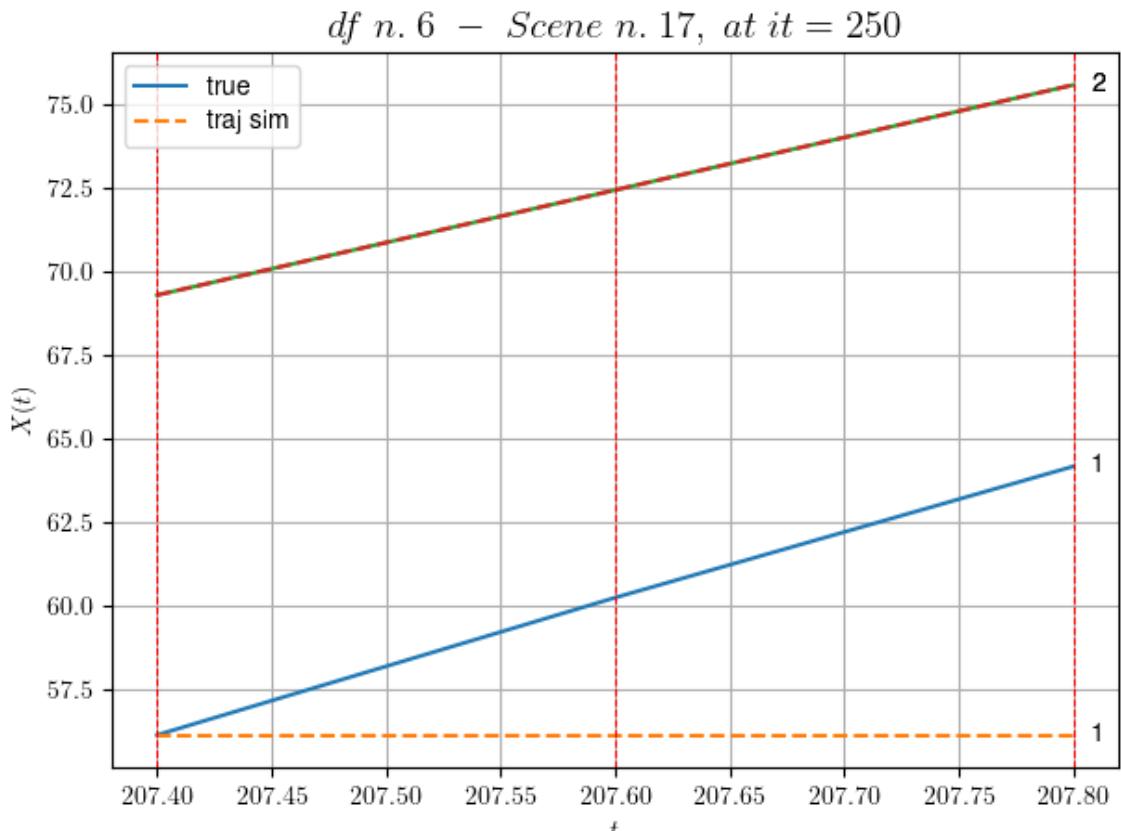
---



---

We have 2 time intervals inside [207.40,207.80]

- \* err= 13.502137280723673
- \* Learning rate NN = 0.0004500000213738531
- \* diff = 8.347514679485357e-09



For scene 17/52

\* use LR\_NN=0.0005 with err=6.83984409734579 at it=24  
\* v0\_scn\_mean = 16.822430660965285  
\* MAE = 13.502137280723673

---

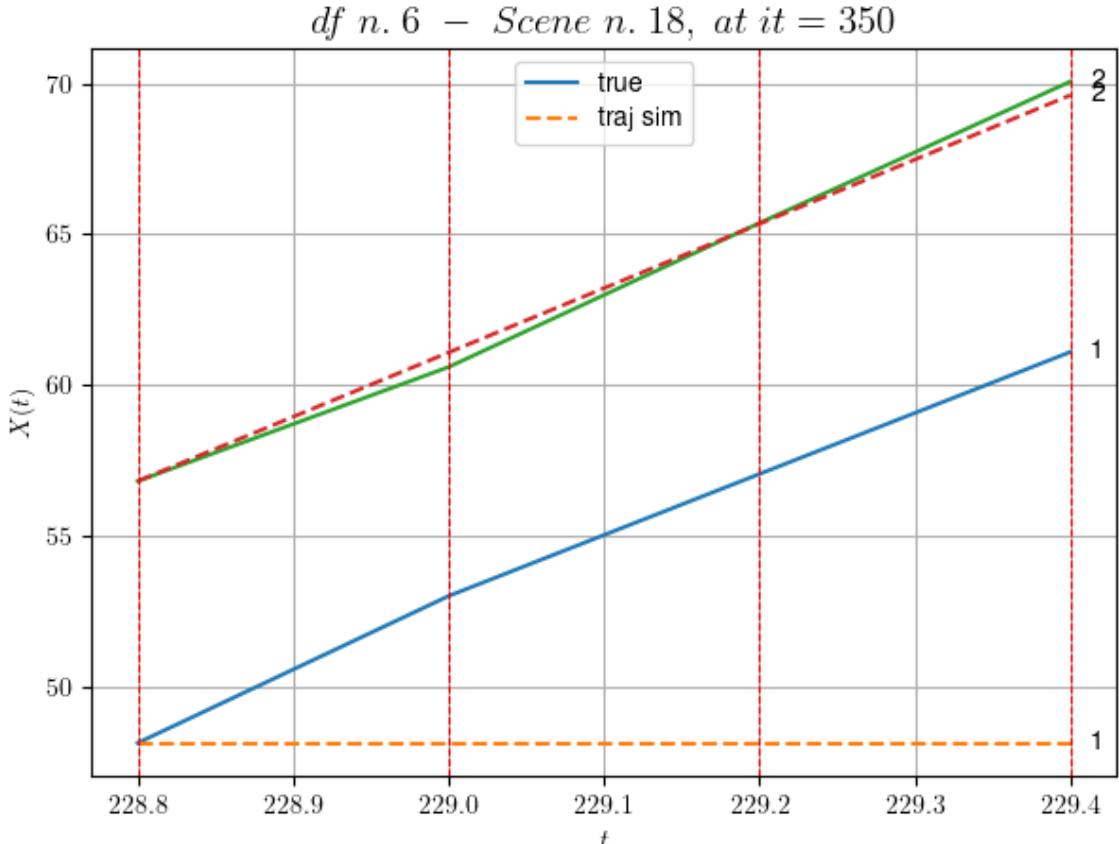
---

df n.6, scene n.18/52

---

---

We have 3 time intervals inside [228.80,229.40]  
\* err= 33.952887863236384  
\* Learning rate NN = 0.0003280499659013003  
\* diff = 7.737827445453149e-08



For scene 18/52

- \* use LR\_NN=0.0005 with err=4.960820035409239 at it=24
- \* v0\_scn\_mean = 21.815910264083904
- \* MAE = 33.94509003707131

---



---

df n.6, scene n.19/52

---



---

We have 4 time intervals inside [231.20, 232.00]

- Time interval n.0: [231.20, 231.40]
  - \* y\_true: [12.00056725]
  - \* v\_ann: [-0.0006571384728886187, 21.15537751020868]

4]

---



---

- Time interval n.1: [231.40, 231.60]
  - \* y\_true: [15.22086391]
  - \* v\_ann: [-1.1736493434000295e-05, 21.15537751020868]

84]

---



---

- Time interval n.2: [231.60, 231.80]
  - \* y\_true: [16.02593808]
  - \* v\_ann: [-9.678858603479057e-09, 21.15537751020868]

4]

---



---

```

- Time interval n.3: [231.80, 232.00]

* y_true: [14.7260182]

* v_ann: [-1.9345278712279423e-09, 21.1553775102086

84]

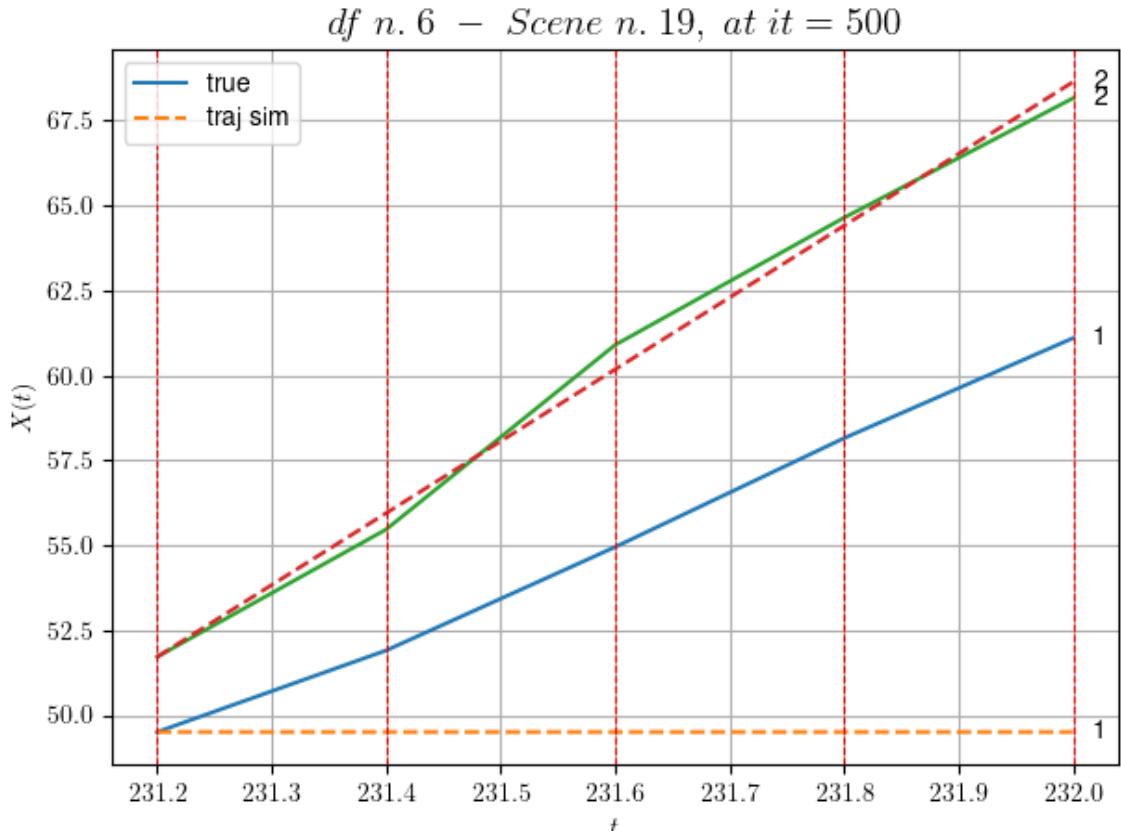
```

```

* err= 24.568975433557505

* Learning rate NN = 0.004782968200743198

* diff = 1.7629328688428814e-05
```



For scene 19/52

```

* use LR_NN=0.01 with err=9.640394540262486 at it=24

* v0_scn_mean = 21.509162409732685

* MAE = 24.568975433557505
```

```

=====
=====

df n.6, scene n.20/52
=====
```

```

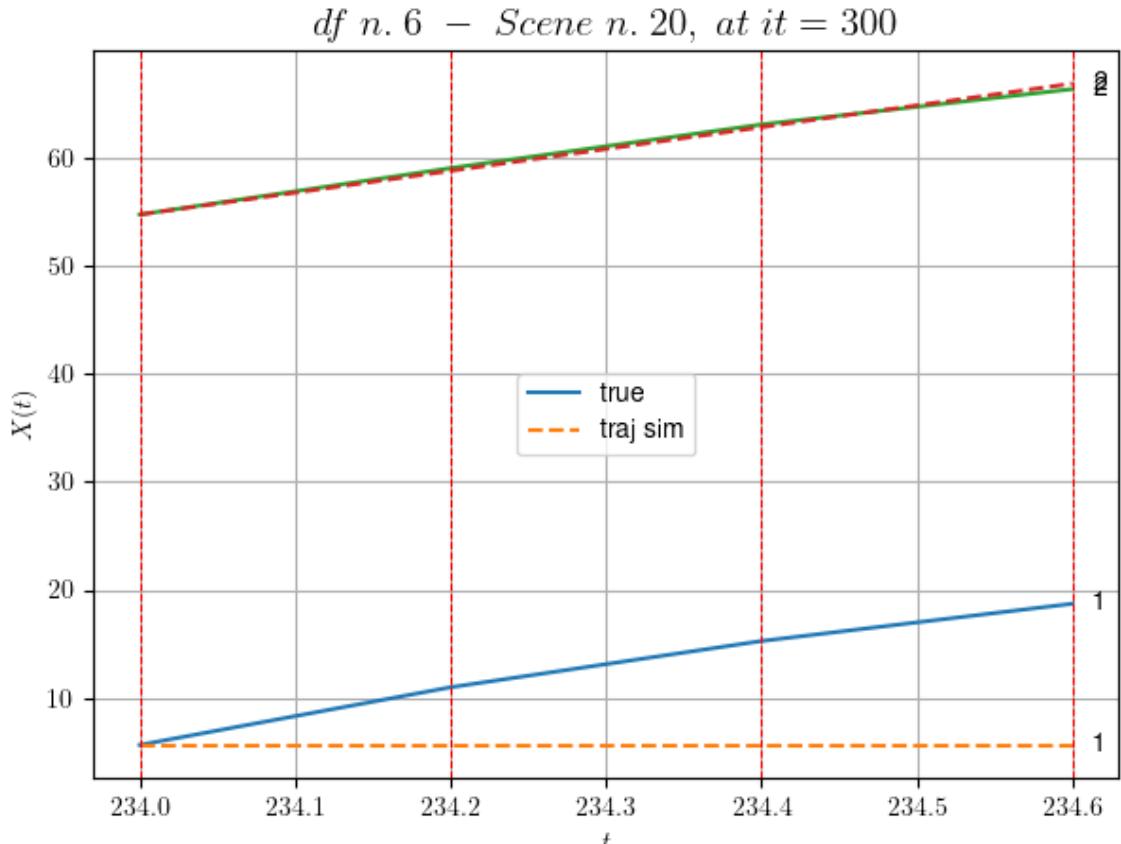
=====

We have 3 time intervals inside [234.00,234.60]

* err= 36.510009283372106

* Learning rate NN = 7.289998848136747e-06

* diff = 9.399946492294475e-07
```



For scene 20/52

- \* use LR\_NN=1e-05 with err=7.3629520902519126 at it=24
  - \* v0\_scn\_mean = 20.85460893115153
  - \* MAE = 36.510009283372106
- 
- 

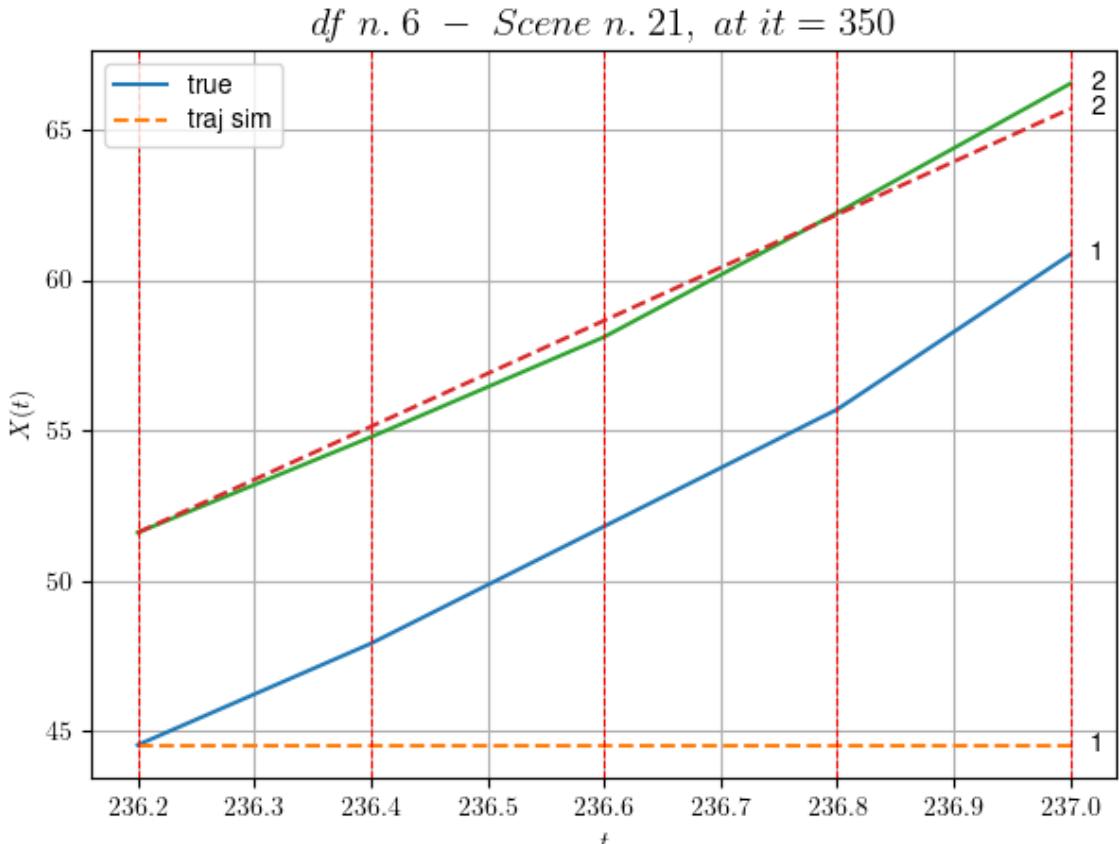
df n.6, scene n.21/52

---

---

We have 4 time intervals inside [236.20, 237.00]

- \* err= 45.657134167197206
- \* Learning rate NN = 5.904899080633186e-05
- \* diff = 1.9587189115100045e-07



For scene 21/52

\* use LR\_NN=0.0001 with err=17.710897479010644 at it=24  
\* v0\_scn\_mean = 18.340752050381706  
\* MAE = 45.64276710135676

---

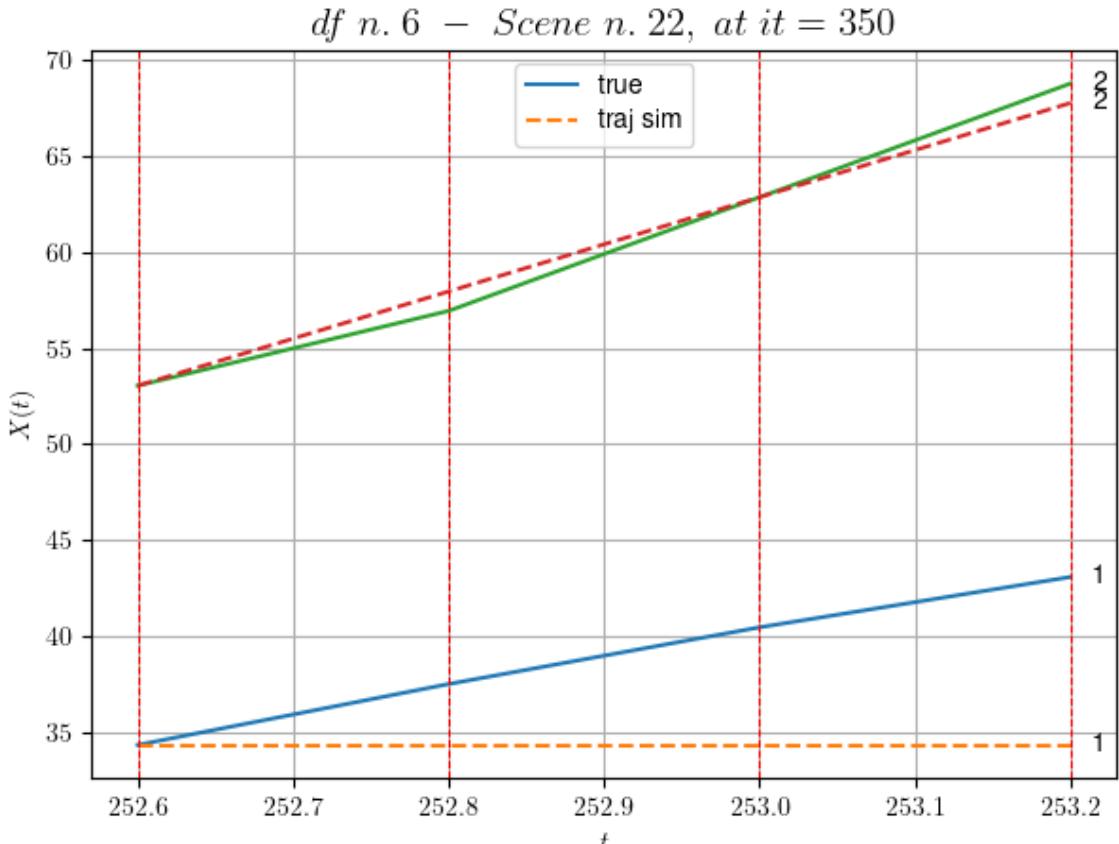
---

df n.6, scene n.22/52

---

---

We have 3 time intervals inside [252.60,253.20]  
\* err= 15.743588538508442  
\* Learning rate NN = 6.560998735949397e-05  
\* diff = 1.0594523658369326e-07



For scene 22/52

\* use LR\_NN=0.0001 with err=1.9231258334972663 at it=24  
\* v0\_scn\_mean = 24.827679417425454  
\* MAE = 15.706991118354887

---

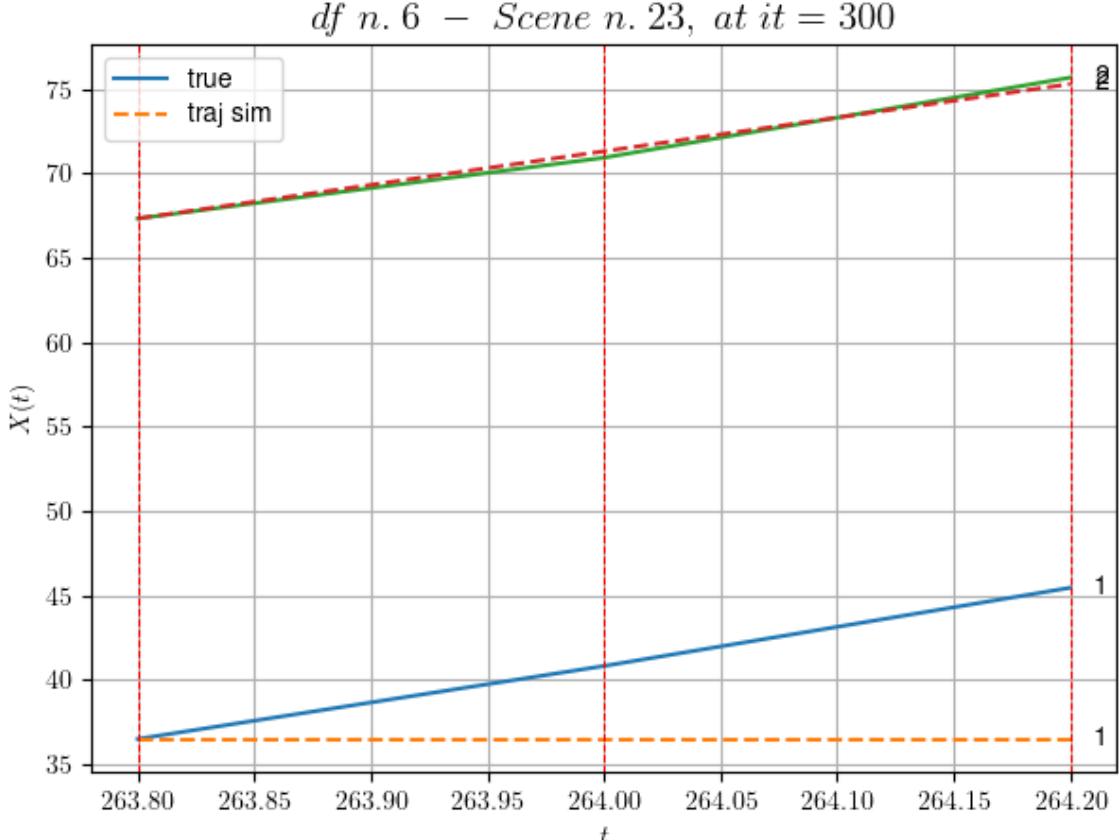
---

df n.6, scene n.23/52

---

---

We have 2 time intervals inside [263.80, 264.20]  
\* err= 16.55939279289653  
\* Learning rate NN = 4.049999552080408e-05  
\* diff = 6.340777432001232e-07



For scene 23/52

- \* use LR\_NN=5e-05 with err=3.1752792389529745 at it=24
- \* v0\_scn\_mean = 20.609382316999877
- \* MAE = 16.55454463050597

---



---

df n.6, scene n.24/52

---



---

We have 6 time intervals inside [286.80, 288.00]

- Time interval n.0: [286.80, 287.00]
  - \* y\_true: [22.82063727]
  - \* v\_ann: [22.360319137573242, 26.634646976103117]

---

- Time interval n.1: [287.00, 287.20]
  - \* y\_true: [25.60093433]
  - \* v\_ann: [22.455177307128906, 26.634646976103117]

---

- Time interval n.2: [287.20, 287.40]
  - \* y\_true: [24.85112481]
  - \* v\_ann: [23.38374900817871, 26.634646976103117]

---

- Time interval n.3: [287.40, 287.60]
  - \* y\_true: [21.10615876]

\* v\_ann: [23.885896682739258, 26.634646976103117]

---

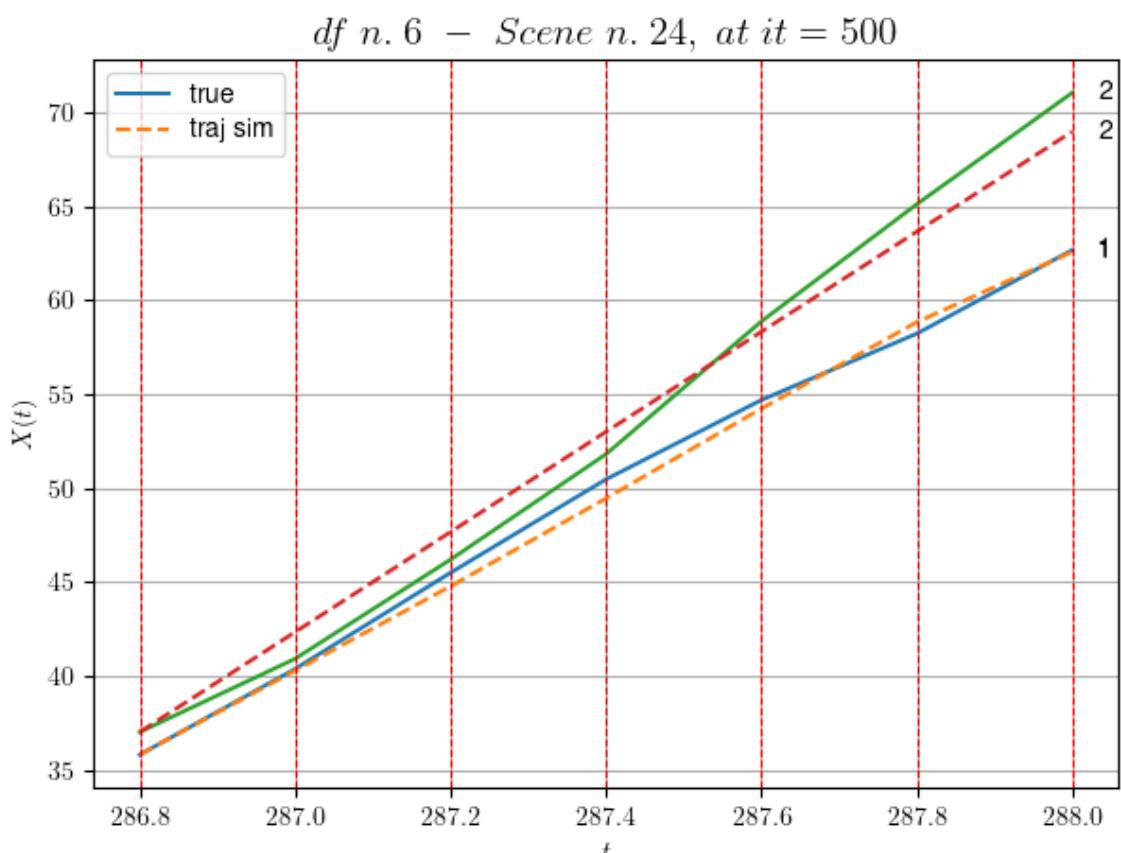
- Time interval n.4: [287.60, 287.80]  
 \* y\_true: [17.67608151]  
 \* v\_ann: [23.026723861694336, 26.634646976103117]

---

- Time interval n.5: [287.80, 288.00]  
 \* y\_true: [22.23666518]  
 \* v\_ann: [18.682458877563477, 26.634646976103117]

---

\* err= 1.0330094702861576  
 \* Learning rate NN = 0.0015690524596720934  
 \* diff = 0.020129303245614683



For scene 24/52

\* use LR\_NN=0.005 with err=2.4857042930933977 at it=24  
 \* v0\_scn\_mean = 26.769261097033084  
 \* MAE = 1.0330094702861576

---



---

df n.6, scene n.25/52

---



---

We have 2 time intervals inside [296.40, 296.80]  
 - Time interval n.0: [296.40, 296.60]

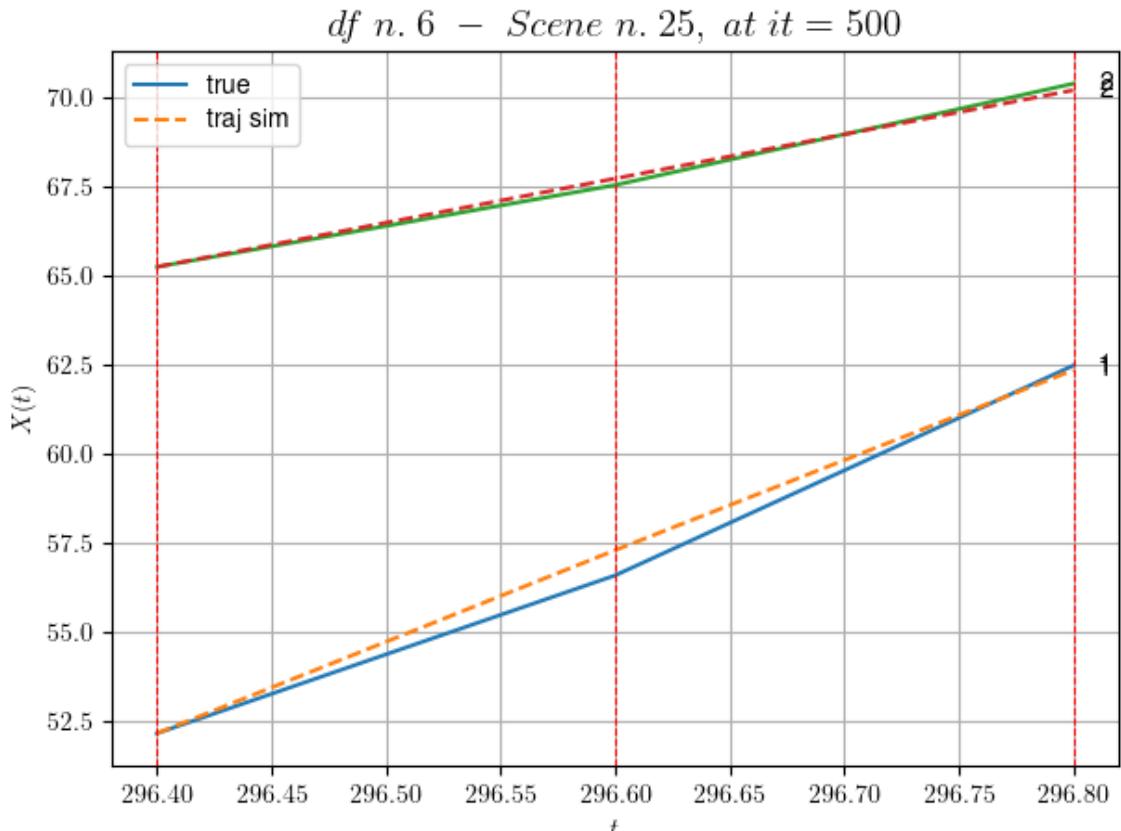
```
* y_true: [22.17130127]
* v_ann: [25.710725784301758, 12.39941248857221]
```

---

```
- Time interval n.1: [296.60, 296.80]
* y_true: [29.46198743]
* v_ann: [25.269672393798828, 12.39941248857221]
```

---

```
* err= 0.09772845566994066
* Learning rate NN = 7.289998757187277e-05
* diff = 0.0012873352036833347
```



For scene 25/52

```
* use LR_NN=0.0001 with err=10.320997113441004 at it=24
* v0_scn_mean = 13.10343598889516
* MAE = 0.09772845566994066
```

---



---



---

df n.6, scene n.26/52

---



---



---

We have 5 time intervals inside [320.20,321.20]

```
- Time interval n.0: [320.20, 320.40]
* y_true: [22.07575568]
* v_ann: [19.868051528930664, 27.667143511899713]
```

- Time interval n.1: [320.40, 320.60]  
 \* y\_true: [21.84581177]  
 \* v\_ann: [22.20386505126953, 27.667143511899713]

---

- Time interval n.2: [320.60, 320.80]  
 \* y\_true: [20.9260361]  
 \* v\_ann: [24.043251037597656, 27.667143511899713]

---

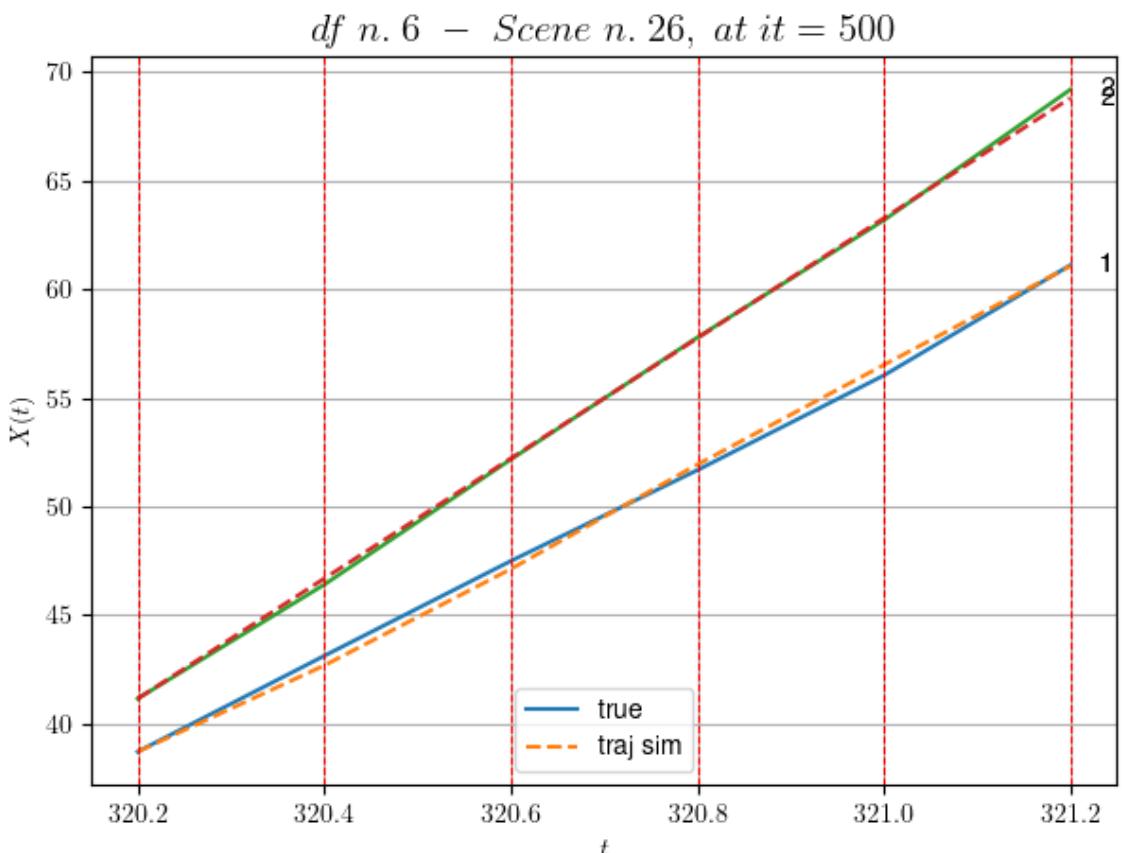
- Time interval n.3: [320.80, 321.00]  
 \* y\_true: [21.82118046]  
 \* v\_ann: [22.970321655273438, 27.667143511899713]

---

- Time interval n.4: [321.00, 321.20]  
 \* y\_true: [25.40175794]  
 \* v\_ann: [22.77249526977539, 27.667143511899713]

---

\* err= 0.07301727613643741  
 \* Learning rate NN = 0.0019371019443497062  
 \* diff = 0.0035888790083399014



For scene 26/52

\* use LR\_NN=0.005 with err=1.0584473730663593 at it=24  
 \* v0\_scn\_mean = 27.760457771403804  
 \* MAE = 0.03480472270428731

---



---



---

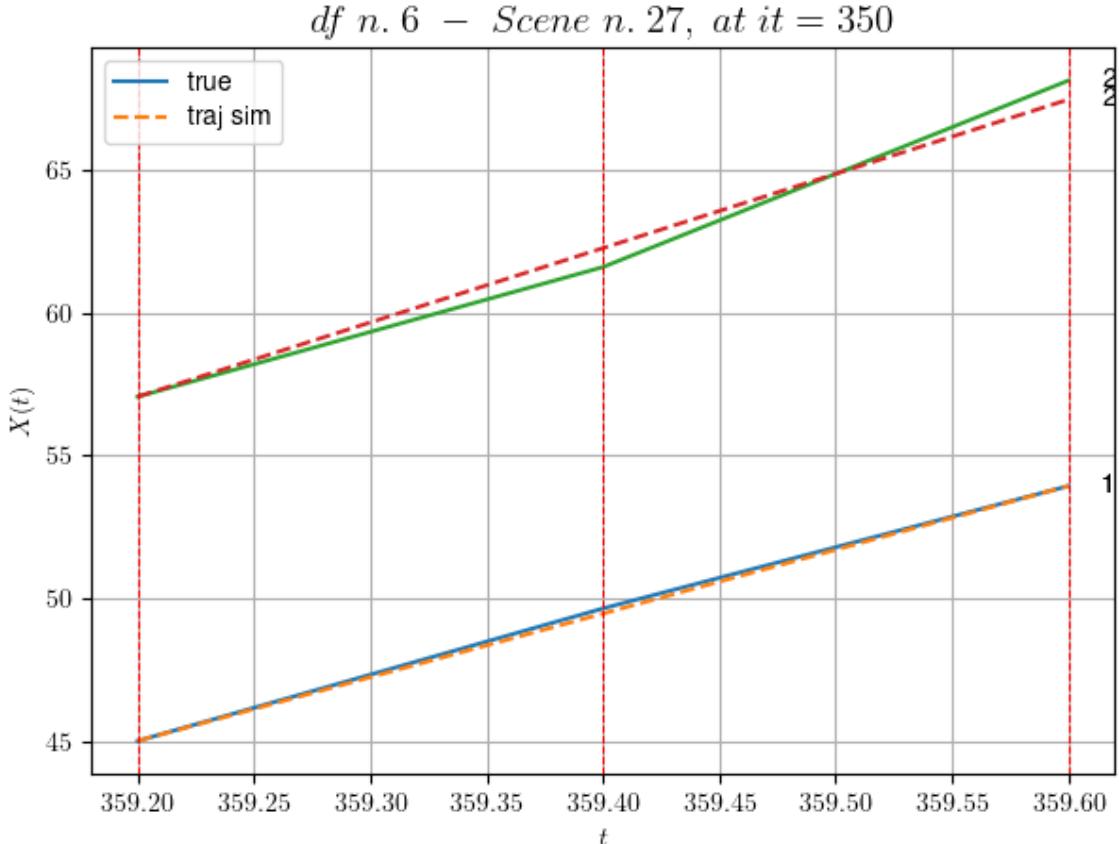
df n.6, scene n.27/52

---



---

We have 2 time intervals inside [359.20,359.60]  
 \* err= 0.1523133102770074  
 \* Learning rate NN = 8.099999104160815e-05  
 \* diff = 3.749866364366472e-07



For scene 27/52

\* use LR\_NN=0.0001 with err=0.5103269376271139 at it=24  
 \* v0\_scn\_mean = 26.263421135283977  
 \* MAE = 0.13775043655388391

---



---

df n.6, scene n.28/52

---



---

We have 5 time intervals inside [368.20,369.20]

- Time interval n.0: [368.20, 368.40]
  - \* y\_true: [20.48034946]
  - \* v\_ann: [23.553197860717773, 26.269654614172595]

---



---

- Time interval n.1: [368.40, 368.60]
  - \* y\_true: [26.0305779]
  - \* v\_ann: [23.824947357177734, 26.269654614172595]

```

- Time interval n.2: [368.60, 368.80]

* y_true: [23.10068181]

* v_ann: [24.069604873657227, 26.269654614172595]

```

```

- Time interval n.3: [368.80, 369.00]

* y_true: [26.67099024]

* v_ann: [24.61815643310547, 26.269654614172595]

```

```

- Time interval n.4: [369.00, 369.20]

* y_true: [24.60614791]

* v_ann: [25.006380081176758, 26.269654614172595]

```

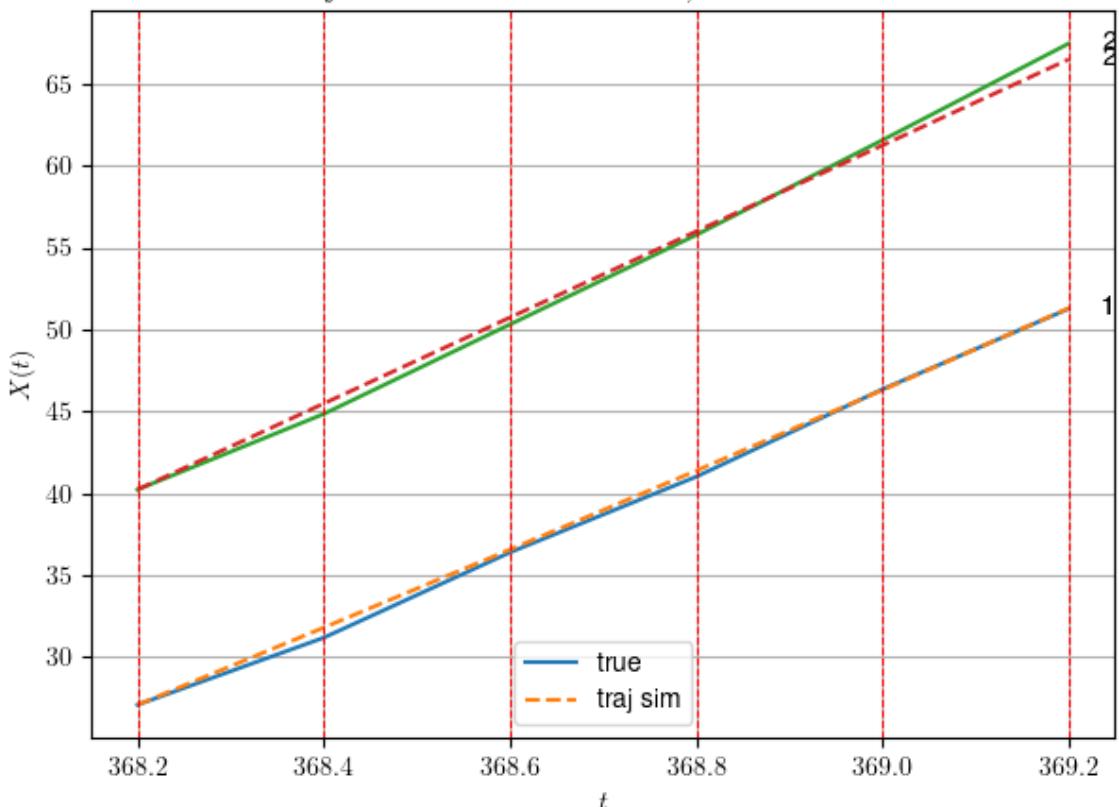
```

* err= 0.18370525367793503

* Learning rate NN = 1.9371018424862996e-05

* diff = 9.450367542901406e-05
```

*df n. 6 – Scene n. 28, at it = 500*



```

* use LR_NN=5e-05 with err=2.22360344560985 at it=24

* v0_scn_mean = 26.418868429577547

* MAE = 0.16163766348778535
=====
```

df n.6, scene n.29/52

```
=====
=====

We have 8 time intervals inside [374.40,376.00]
- Time interval n.0: [374.40, 374.60]
 * y_true: [20.90029714]
 * v_ann: [23.796953201293945, 20.073696885978084]

- Time interval n.1: [374.60, 374.80]
 * y_true: [24.30046975]
 * v_ann: [23.275489807128906, 20.073696885978084]

- Time interval n.2: [374.80, 375.00]
 * y_true: [30.15080009]
 * v_ann: [24.48241424560547, 20.073696885978084]

- Time interval n.3: [375.00, 375.20]
 * y_true: [14.05046583]
 * v_ann: [26.510986328125, 20.073696885978084]

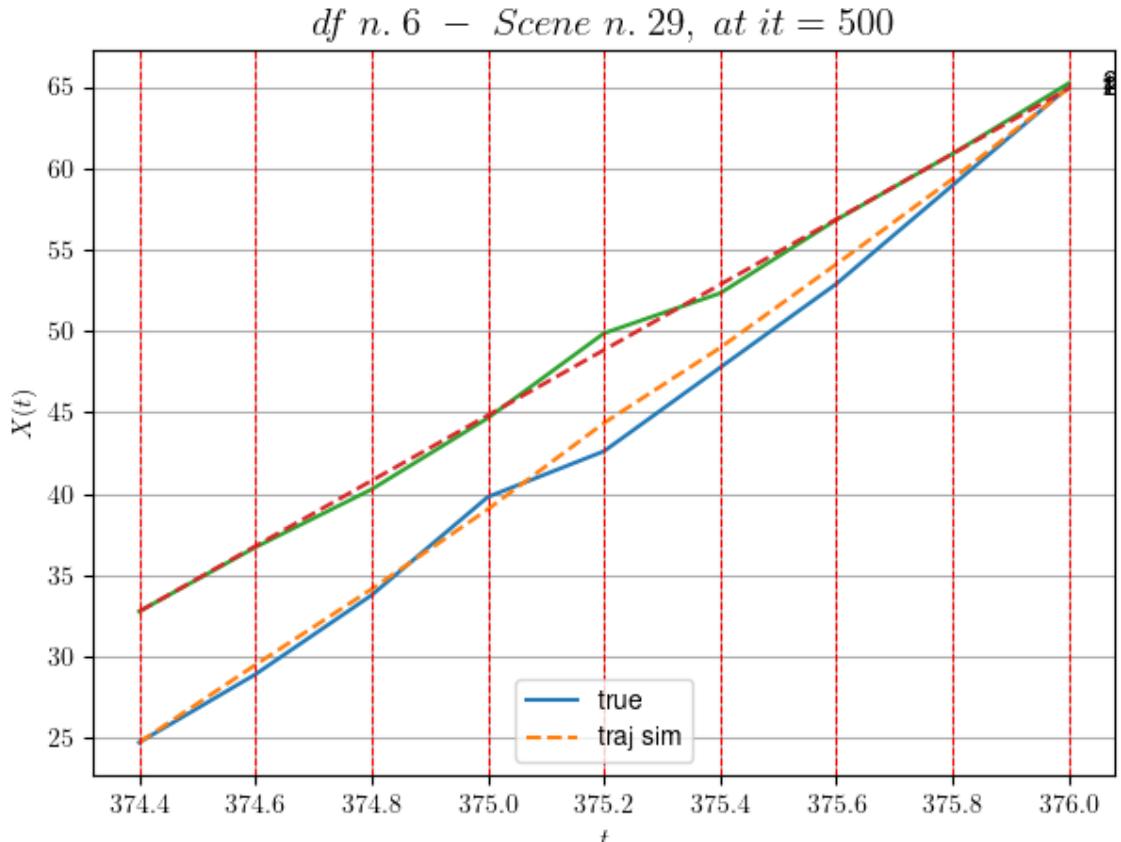
- Time interval n.4: [375.20, 375.40]
 * y_true: [25.70114537]
 * v_ann: [23.10953712463379, 20.073696885978084]

- Time interval n.5: [375.40, 375.60]
 * y_true: [25.70114537]
 * v_ann: [25.663654327392578, 20.073696885978084]

- Time interval n.6: [375.60, 375.80]
 * y_true: [30.25204725]
 * v_ann: [26.14805793762207, 20.073696885978084]

- Time interval n.7: [375.80, 376.00]
 * y_true: [30.25204725]
 * v_ann: [27.93297576904297, 20.073696885978084]

* err= 0.4937900535938945
* Learning rate NN = 0.00020589104678947479
* diff = 0.009159246634228402
```



For scene 29/52

\* use LR\_NN=0.001 with err=48.2251498357602 at it=24  
\* v0\_scn\_mean = 20.47074901046292  
\* MAE = 0.4894455001678133

---

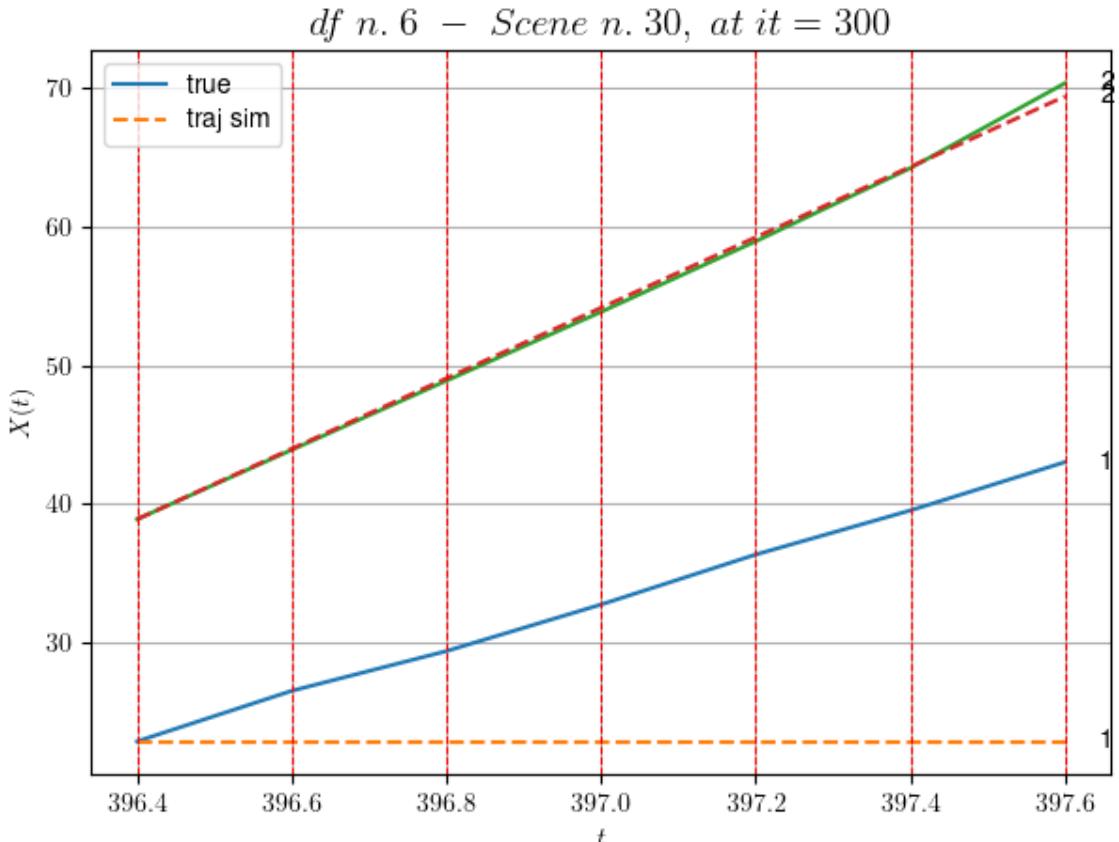
---

df n.6, scene n.30/52

---

---

We have 6 time intervals inside [396.40,397.60]  
\* err= 72.82508793332347  
\* Learning rate NN = 0.000478296831715852  
\* diff = 8.716909007944196e-07



For scene 30/52

- \* use LR\_NN=0.001 with err=5.333111204301439 at it=24
- \* v0\_scn\_mean = 25.734526667893174
- \* MAE = 7.302028722829762

---



---

df n.6, scene n.31/52

---



---

We have 7 time intervals inside [407.80, 409.20]

- Time interval n.0: [407.80, 408.00]
  - \* y\_true: [21.37567004]
  - \* v\_ann: [22.65230941772461, 22.363716298521354]

---

- Time interval n.1: [408.00, 408.20]
  - \* y\_true: [22.01576805]
  - \* v\_ann: [22.65557289123535, 22.363716298521354]

---

- Time interval n.2: [408.20, 408.40]
  - \* y\_true: [24.57616006]
  - \* v\_ann: [22.53282928466797, 22.363716298521354]

---

- Time interval n.3: [408.40, 408.60]
  - \* y\_true: [23.06614677]

```
* v_ann: [22.744447708129883, 22.363716298521354]
```

---

```
- Time interval n.4: [408.60, 408.80]
* y_true: [17.02609359]
* v_ann: [22.744705200195312, 22.363716298521354]
```

---

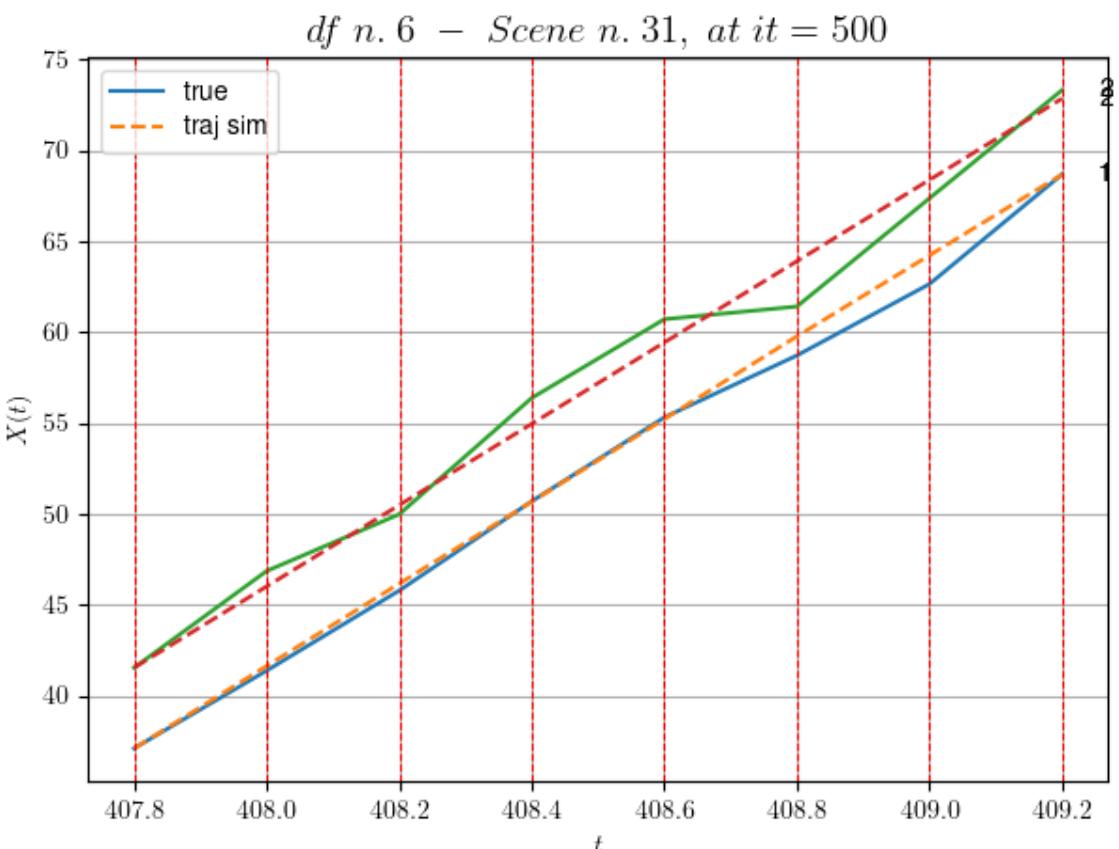
```
- Time interval n.5: [408.80, 409.00]
* y_true: [19.65139949]
* v_ann: [22.272550582885742, 22.363716298521354]
```

---

```
- Time interval n.6: [409.00, 409.20]
* y_true: [30.15262306]
* v_ann: [22.238574981689453, 22.363716298521354]
```

---

```
* err= 0.9947208262702042
* Learning rate NN = 0.00012709324073512107
* diff = 0.0019873739933787826
```



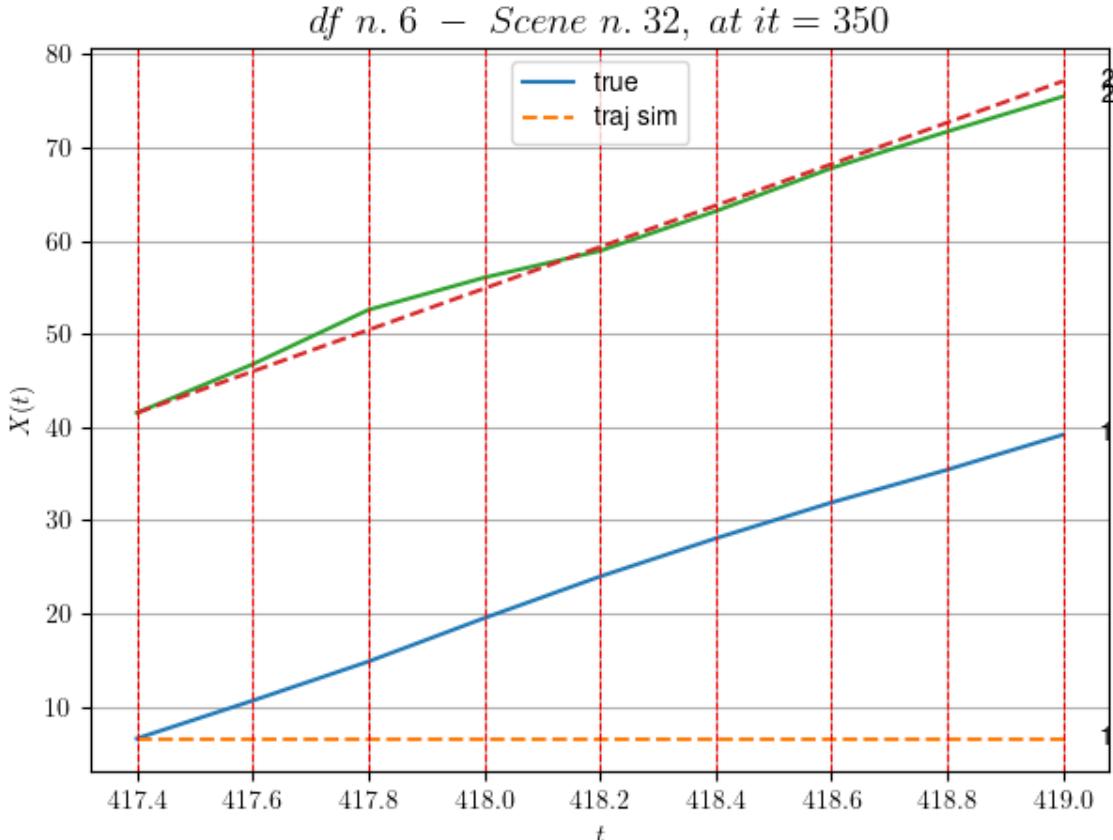
For scene 31/52

```
* use LR_NN=0.0005 with err=22.76790086024687 at it=24
* v0_scn_mean = 22.669167646522123
* MAE = 0.9888167541707031
```

```
df n.6, scene n.32/52
```

```
=====
=====
```

We have 8 time intervals inside [417.40,419.00]  
\* err= 197.96441413575624  
\* Learning rate NN = 0.00015690525469835848  
\* diff = 6.157384291327617e-07



For scene 32/52

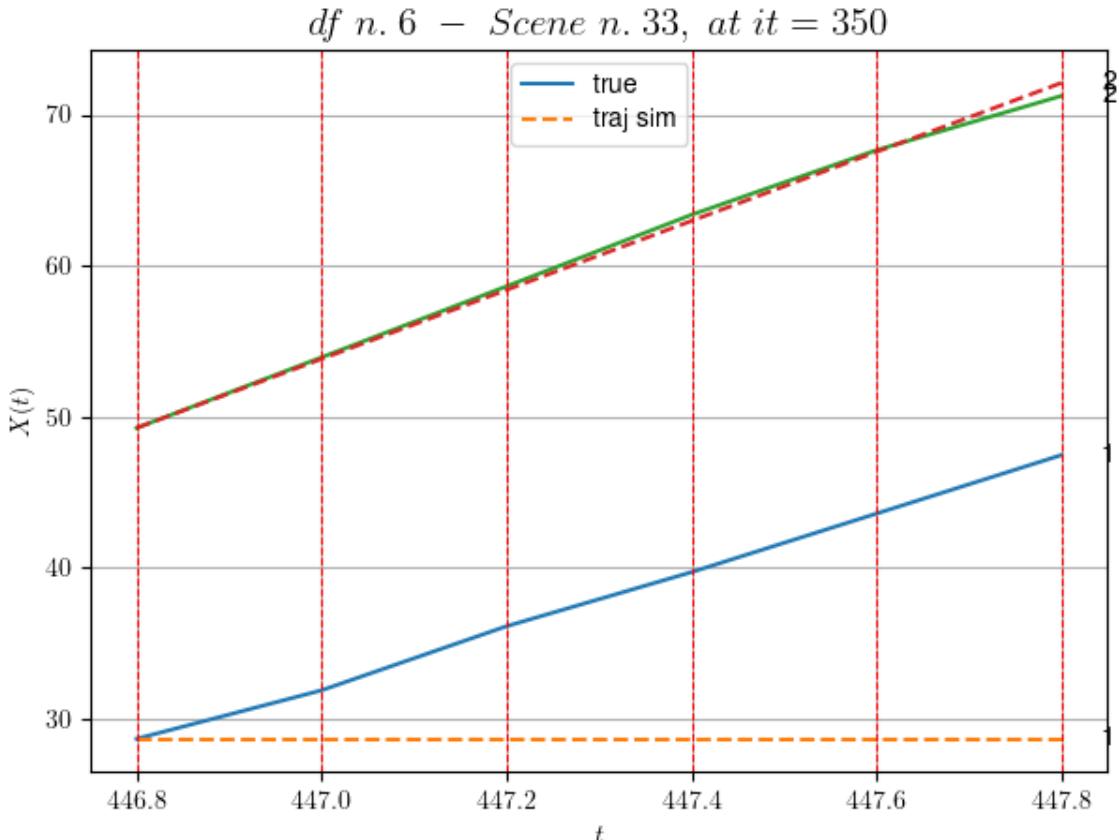
\* use LR\_NN=0.0005 with err=31.080122409181342 at it=24  
\* v0\_scn\_mean = 22.6966734619225  
\* MAE = 67.9810434510724

```
=====
=====
```

```
df n.6, scene n.33/52
```

```
=====
=====
```

We have 5 time intervals inside [446.80,447.80]  
\* err= 63.61223573480317  
\* Learning rate NN = 5.314408917911351e-05  
\* diff = 9.400621081567806e-08



For scene 33/52

- \* use LR\_NN=0.0001 with err=9.99454616975143 at it=24
- \* v0\_scn\_mean = 23.250541037239092
- \* MAE = 63.61223573480317

---



---

df n.6, scene n.34/52

---



---

We have 3 time intervals inside [448.40, 449.00]

- Time interval n.0: [448.40, 448.60]
  - \* y\_true: [20.45120743]
  - \* v\_ann: [19.492273330688477, 16.351257627075384]

---

- Time interval n.1: [448.60, 448.80]
  - \* y\_true: [22.88145923]
  - \* v\_ann: [26.241329193115234, 16.351257627075384]

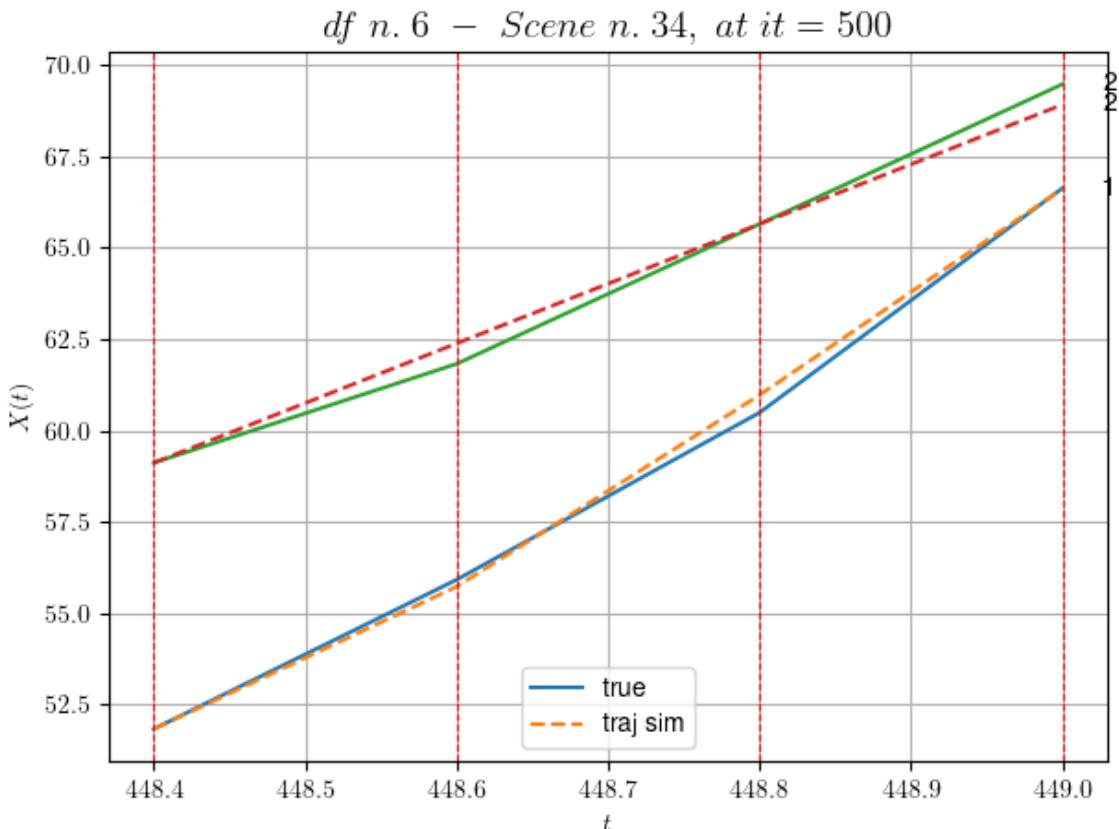
---

- Time interval n.2: [448.80, 449.00]
  - \* y\_true: [30.73239033]
  - \* v\_ann: [28.228368759155273, 16.351257627075384]

---

- \* err= 0.1118924306954849
- \* Learning rate NN = 0.0002952449722215533

\* diff = 4.643711886080648e-05



For scene 34/52

\* use LR\_NN=0.0005 with err=13.170264017538182 at it=24  
 \* v0 scn mean = 16.89720732188804  
 \* MAE = 0.1118924306954849

---



---

df n.6, scene n.35/52

---



---

We have 3 time intervals inside [450.60, 451.20]

- Time interval n.0: [450.60, 450.80]
  - \* y\_true: [21.37625172]
  - \* v\_ann: [24.698862075805664, 24.707838126991827]

---

- Time interval n.1: [450.80, 451.00]
  - \* y\_true: [24.60663191]
  - \* v\_ann: [23.599424362182617, 24.707838126991827]

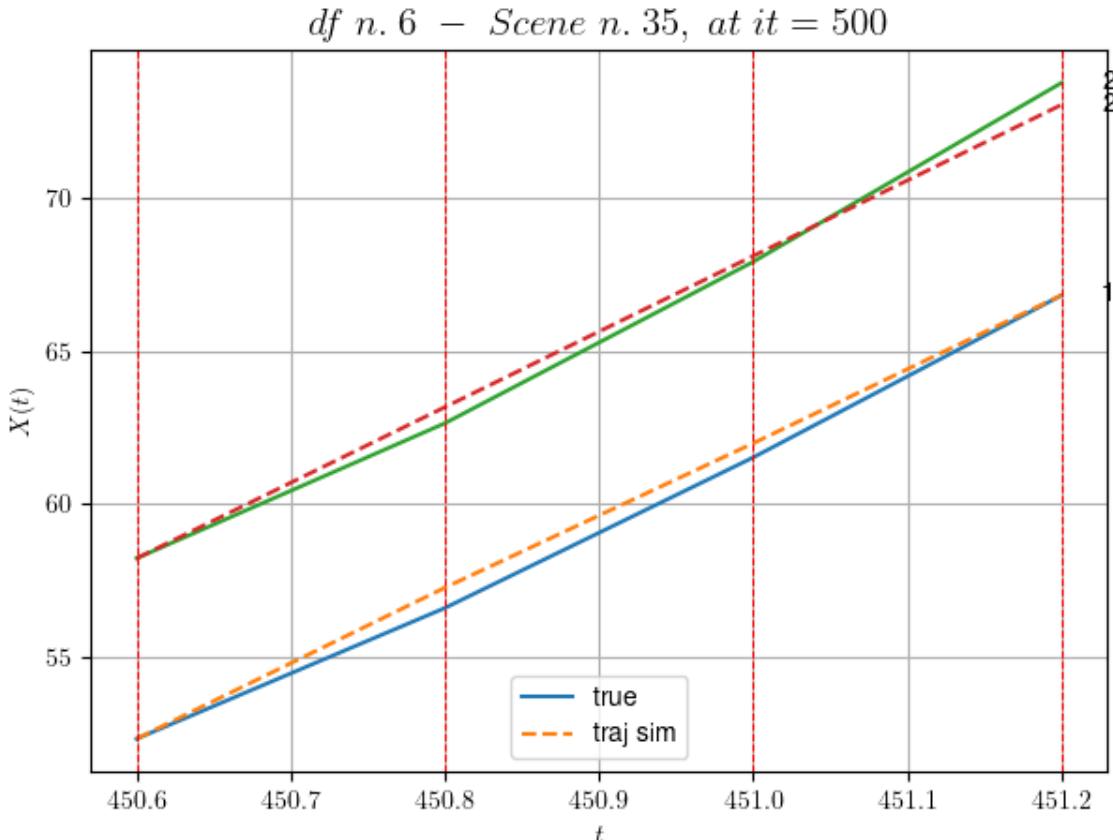
---

- Time interval n.2: [451.00, 451.20]
  - \* y\_true: [26.4920936]
  - \* v\_ann: [24.216053009033203, 24.707838126991827]

---

\* err= 0.18558146349874438  
 \* Learning rate NN = 0.0005904899444431067

\* diff = 0.001077589373586707



For scene 35/52

\* use LR\_NN=0.001 with err=1.7751969278130584 at it=24  
 \* v0\_scn\_mean = 24.9195246018718  
 \* MAE = 0.18494885557098167

---



---

df n.6, scene n.36/52

---



---

We have 2 time intervals inside [458.00, 458.40]

- Time interval n.0: [458.00, 458.20]
  - \* y\_true: [26.37695887]
  - \* v\_ann: [21.392473220825195, 10.716650123126668]

---

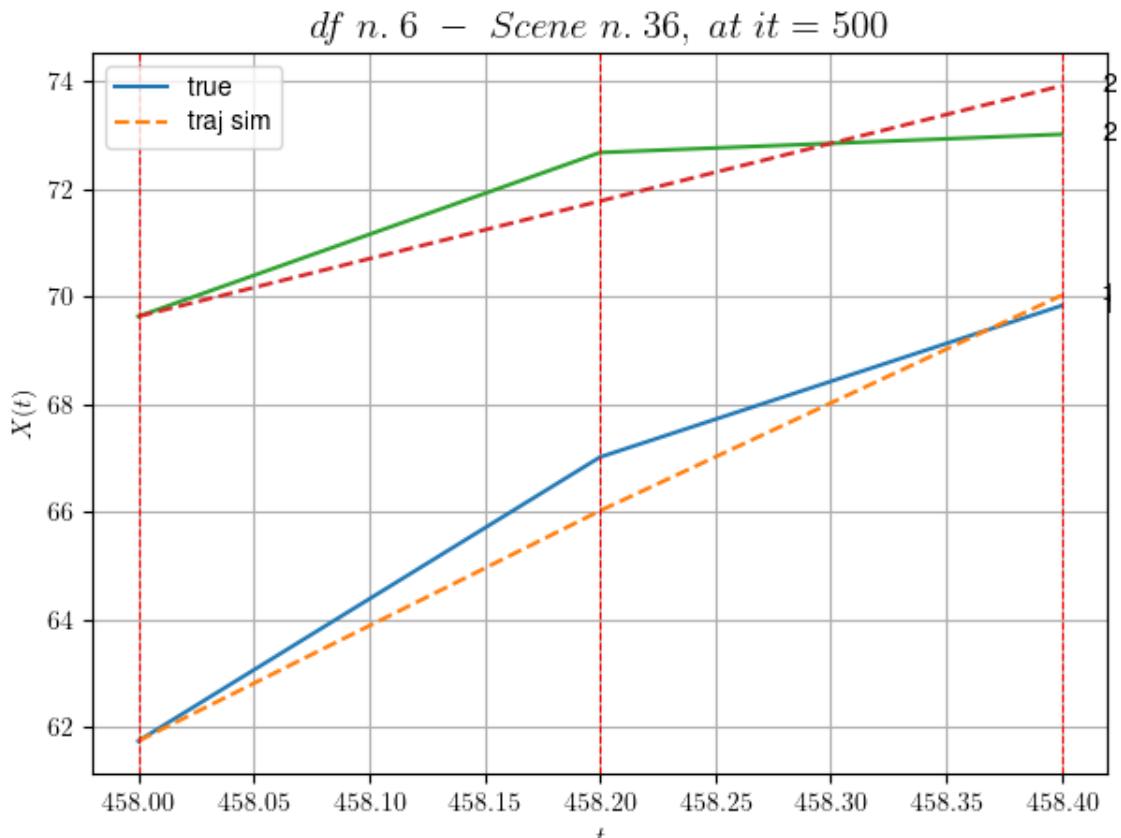
- Time interval n.1: [458.20, 458.40]
  - \* y\_true: [14.07546308]
  - \* v\_ann: [20.019535064697266, 10.716650123126668]

---



---

- \* err= 0.44294975757252786
- \* Learning rate NN = 0.00036449998151510954
- \* diff = 0.00036916723641200466



For scene 36/52

\* use LR\_NN=0.0005 with err=13.89331205419346 at it=24  
\* v0\_scn\_mean = 11.487984118054102  
\* MAE = 0.4382953941050963

---

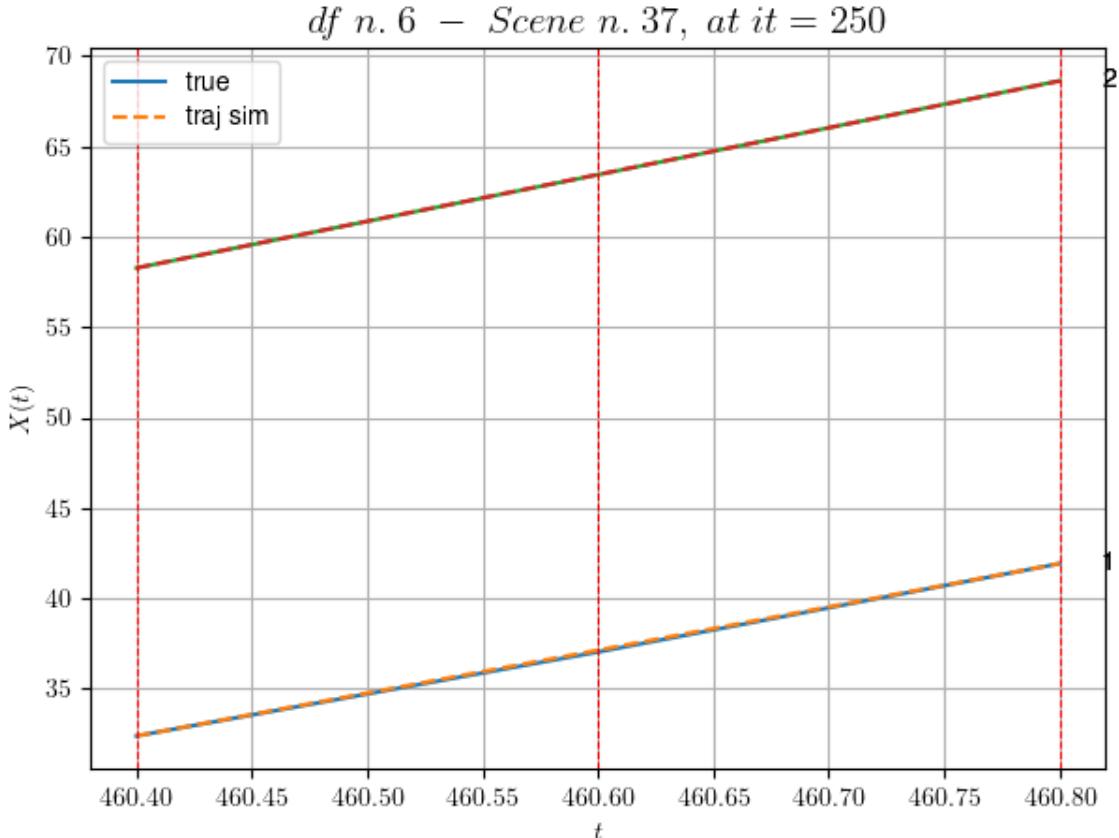
---

df n.6, scene n.37/52

---

---

We have 2 time intervals inside [460.40, 460.80]  
\* err= 0.0017975376036449488  
\* Learning rate NN = 4.499999704421498e-05  
\* diff = 1.0490016363971094e-07



For scene 37/52

\* use LR\_NN=5e-05 with err=0.5664603900243527 at it=24  
 \* v0\_scn\_mean = 26.19918038179505  
 \* MAE = 0.0017455327807399633

---



---

df n.6, scene n.38/52

---



---

We have 6 time intervals inside [465.20, 466.40]

- Time interval n.0: [465.20, 465.40]
  - \* y\_true: [18.28001138]
  - \* v\_ann: [18.70935821533203, 23.956962458801865]

---

- Time interval n.1: [465.40, 465.60]
  - \* y\_true: [20.650036]
  - \* v\_ann: [19.048694610595703, 23.956962458801865]

---

- Time interval n.2: [465.60, 465.80]
  - \* y\_true: [19.5500669]
  - \* v\_ann: [19.636337280273438, 23.956962458801865]

---

- Time interval n.3: [465.80, 466.00]
  - \* y\_true: [19.43011129]

```
* v_ann: [20.17544174194336, 23.956962458801865]
```

---

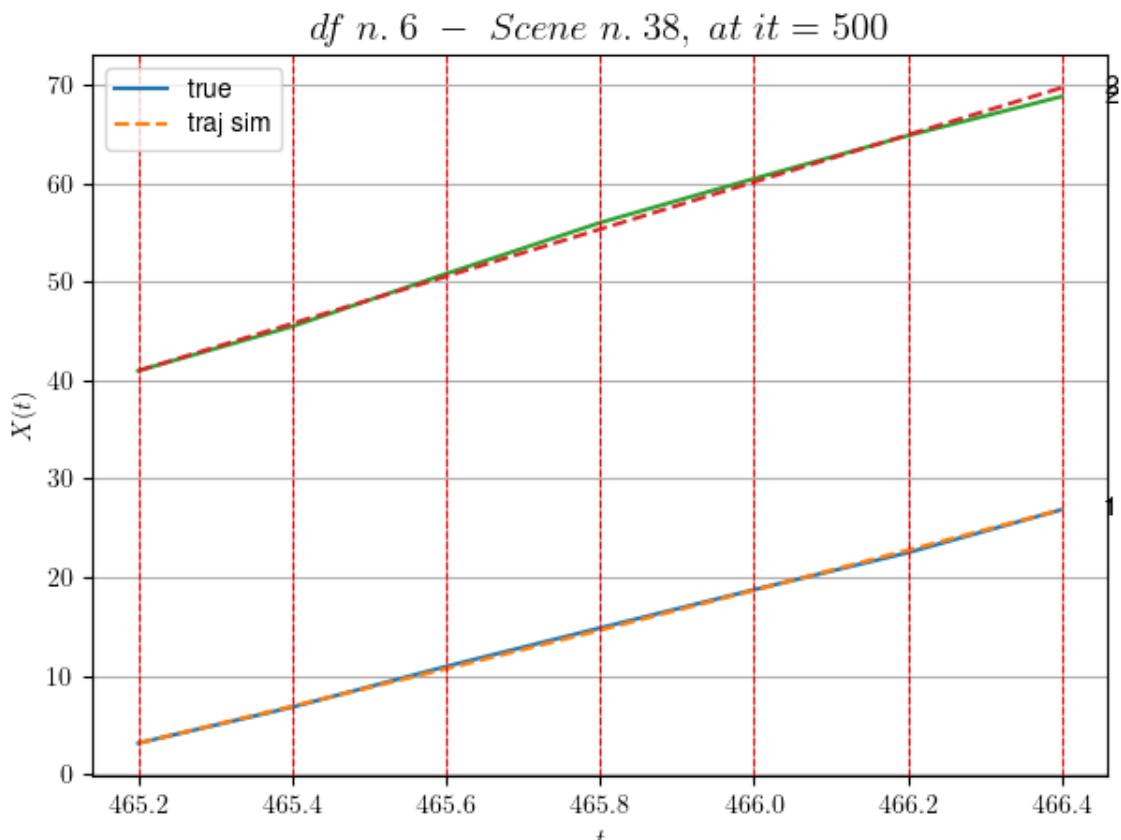
```
- Time interval n.4: [466.00, 466.20]
* y_true: [18.82015982]
* v_ann: [20.39166831970215, 23.956962458801865]
```

---

```
- Time interval n.5: [466.20, 466.40]
* y_true: [21.85026714]
* v_ann: [20.579387664794922, 23.956962458801865]
```

---

```
* err= 0.12058434429993478
* Learning rate NN = 3.138104830213706e-06
* diff = 4.167833392157427e-05
```



For scene 38/52

```
* use LR_NN=1e-05 with err=9.992569979364921 at it=24
* v0_scn_mean = 24.19868396040359
* MAE = 0.12058398719309092
```

---



---



---

df n.6, scene n.39/52

---



---



---



---



---



---

```
We have 6 time intervals inside [467.00,468.20]
- Time interval n.0: [467.00, 467.20]
```

```
* y_true: [18.72012329]
* v_ann: [24.667211532592773, 20.547439201769105]
```

```


- Time interval n.1: [467.20, 467.40]
* y_true: [22.09021781]
* v_ann: [25.19491195678711, 20.547439201769105]
```

```


- Time interval n.2: [467.40, 467.60]
* y_true: [25.12035484]
* v_ann: [24.469812393188477, 20.547439201769105]
```

```


- Time interval n.3: [467.60, 467.80]
* y_true: [22.94045018]
* v_ann: [23.146100997924805, 20.547439201769105]
```

```

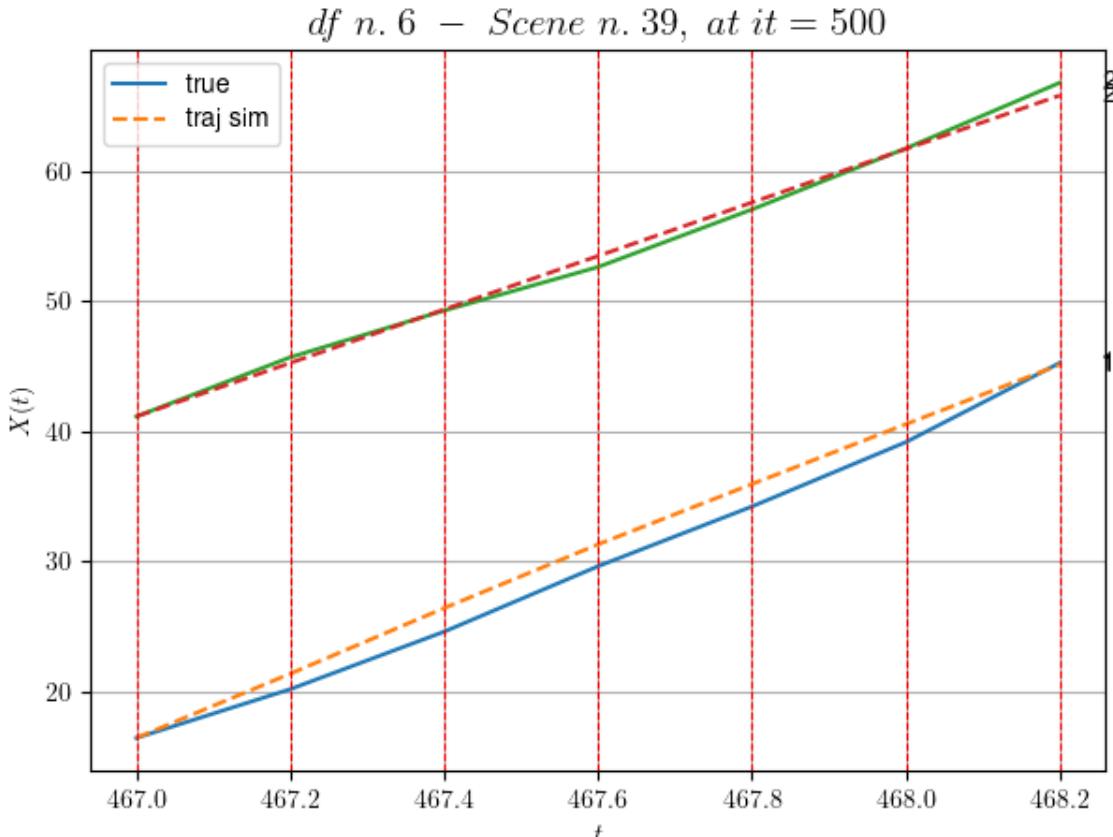

- Time interval n.4: [467.80, 468.00]
* y_true: [24.73065482]
* v_ann: [23.009801864624023, 20.547439201769105]
```

```


- Time interval n.5: [468.00, 468.20]
* y_true: [30.43102618]
* v_ann: [22.835302352905273, 20.547439201769105]
```

```


* err= 1.0399840652516488
* Learning rate NN = 3.138104830213706e-06
* diff = 0 001856858293535657
```



For scene 39/52

\* use LR\_NN=1e-05 with err=23.447188985751076 at it=24  
 \* v0\_scn\_mean = 20.925541633626658  
 \* MAE = 1.038034166810268

---



---

df n.6, scene n.40/52

---



---

We have 10 time intervals inside [477.80, 479.80]

- Time interval n.0: [477.80, 478.00]
  - \* y\_true: [11.6501536]
  - \* v\_ann: [11.096745491027832, 21.601430911083135]

---

- Time interval n.1: [478.00, 478.20]
  - \* y\_true: [14.75023559]
  - \* v\_ann: [11.685422897338867, 21.601430911083135]

---

- Time interval n.2: [478.20, 478.40]
  - \* y\_true: [11.45023382]
  - \* v\_ann: [11.997292518615723, 21.601430911083135]

---

- Time interval n.3: [478.40, 478.60]
  - \* y\_true: [11.45023382]

\* v\_ann: [12.672249794006348, 21.601430911083135]

- Time interval n.4: [478.60, 478.80]

\* y\_true: [13.22535791]

\* v\_ann: [13.2566499710083, 21.601430911083135]

- Time interval n.5: [478.80, 479.00]

\* y\_true: [13.22535791]

\* v\_ann: [13.640520095825195, 21.601430911083135]

- Time interval n.6: [479.00, 479.20]

\* y\_true: [10.32535343]

\* v\_ann: [13.947185516357422, 21.601430911083135]

- Time interval n.7: [479.20, 479.40]

\* y\_true: [10.32535343]

\* v\_ann: [14.038488388061523, 21.601430911083135]

- Time interval n.8: [479.40, 479.60]

\* y\_true: [17.45076528]

\* v\_ann: [14.028620719909668, 21.601430911083135]

- Time interval n.9: [479.60, 479.80]

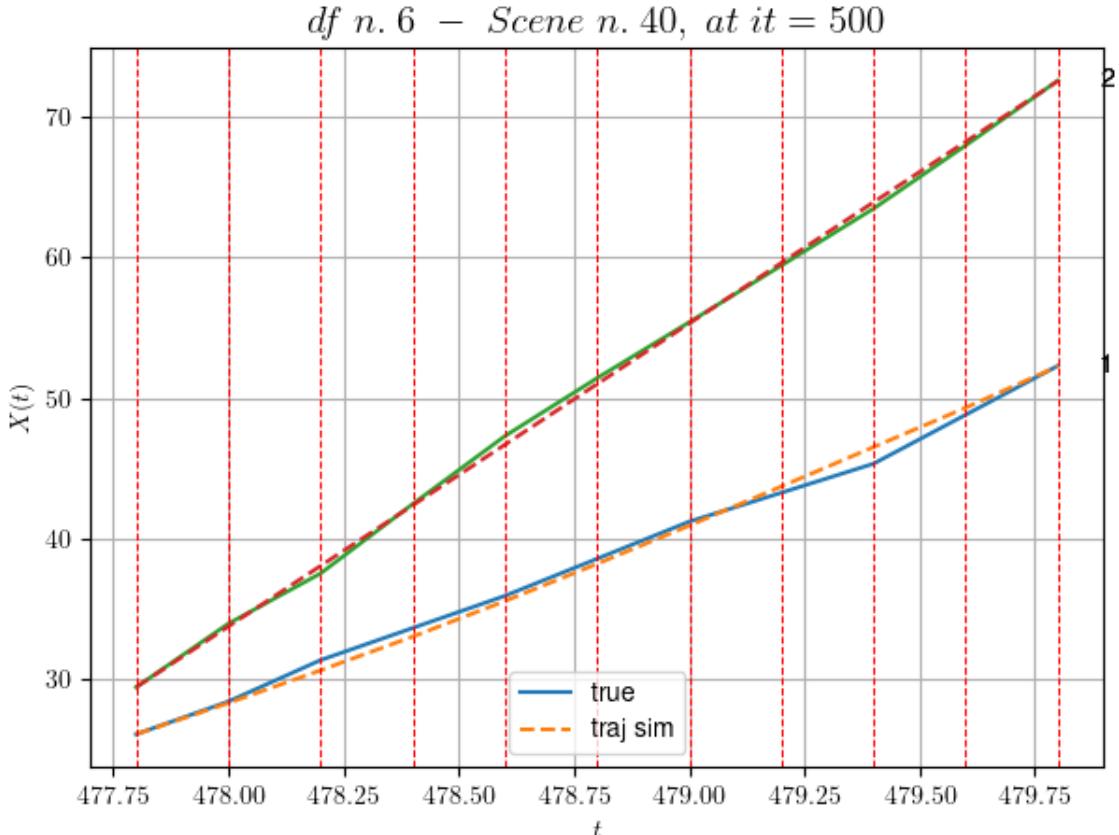
\* y\_true: [17.45076528]

\* v\_ann: [14.756223678588867, 21.601430911083135]

\* err= 0.1971385898725238

\* Learning rate NN = 0.00013508510892279446

\* diff = 0.004607518036656183



For scene 40/52

- \* use LR\_NN=0.001 with err=52.92472462863233 at it=24
- \* v0\_scn\_mean = 21.93737367457439
- \* MAE = 0.1957662601339734

---



---

df n.6, scene n.41/52

---



---

We have 6 time intervals inside [487.00, 488.20]

- Time interval n.0: [487.00, 487.20]
  - \* y\_true: [14.83016814]
  - \* v\_ann: [15.771322250366211, 24.54803862755294]

---

- Time interval n.1: [487.20, 487.40]
  - \* y\_true: [16.8602423]
  - \* v\_ann: [16.234085083007812, 24.54803862755294]

---

- Time interval n.2: [487.40, 487.60]
  - \* y\_true: [16.46530479]
  - \* v\_ann: [16.627614974975586, 24.54803862755294]

---

- Time interval n.3: [487.60, 487.80]
  - \* y\_true: [16.32538291]

```
* v_ann: [17.40489387512207, 24.54803862755294]
```

---

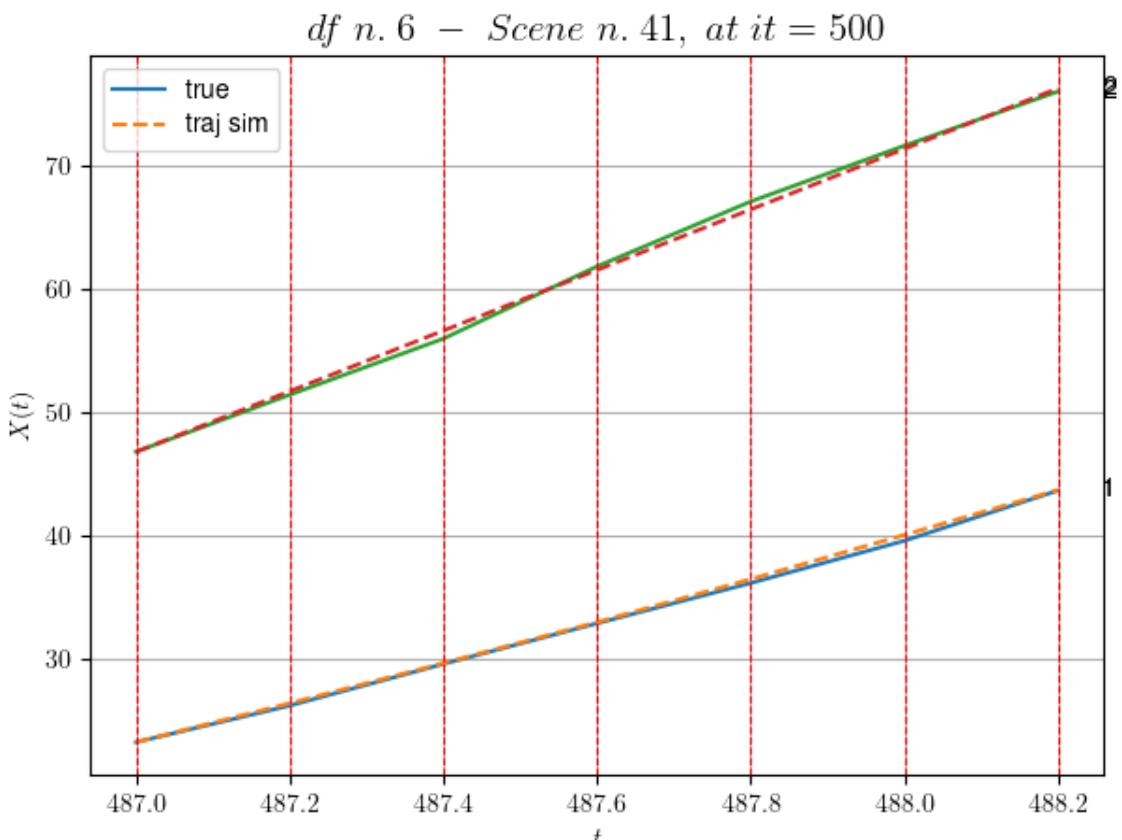
```
- Time interval n.4: [487.80, 488.00]
* y_true: [17.13544627]
* v_ann: [17.945255279541016, 24.54803862755294]
```

---

```
- Time interval n.5: [488.00, 488.20]
* y_true: [20.37569971]
* v_ann: [18.221078872680664, 24.54803862755294]
```

---

```
* err= 0.10807131955326338
* Learning rate NN = 3.138104875688441e-05
* diff = 0.000843114486813859
```



For scene 41/52

```
* use LR_NN=0.0001 with err=7.581436363988694 at it=24
* v0_scn_mean = 24.76611708240898
* MAE = 0.10807131955326338
```

---



---



---

df n.6, scene n.42/52

---



---



---



---



---



---

```
We have 3 time intervals inside [493.80,494.40]
- Time interval n.0: [493.80, 494.00]
```

```
* y_true: [15.56081458]
* v_ann: [14.293802261352539, 27.57702754451529]
```

---

```
- Time interval n.1: [494.00, 494.20]
* y_true: [14.07584833]
* v_ann: [16.247692108154297, 27.57702754451529]
```

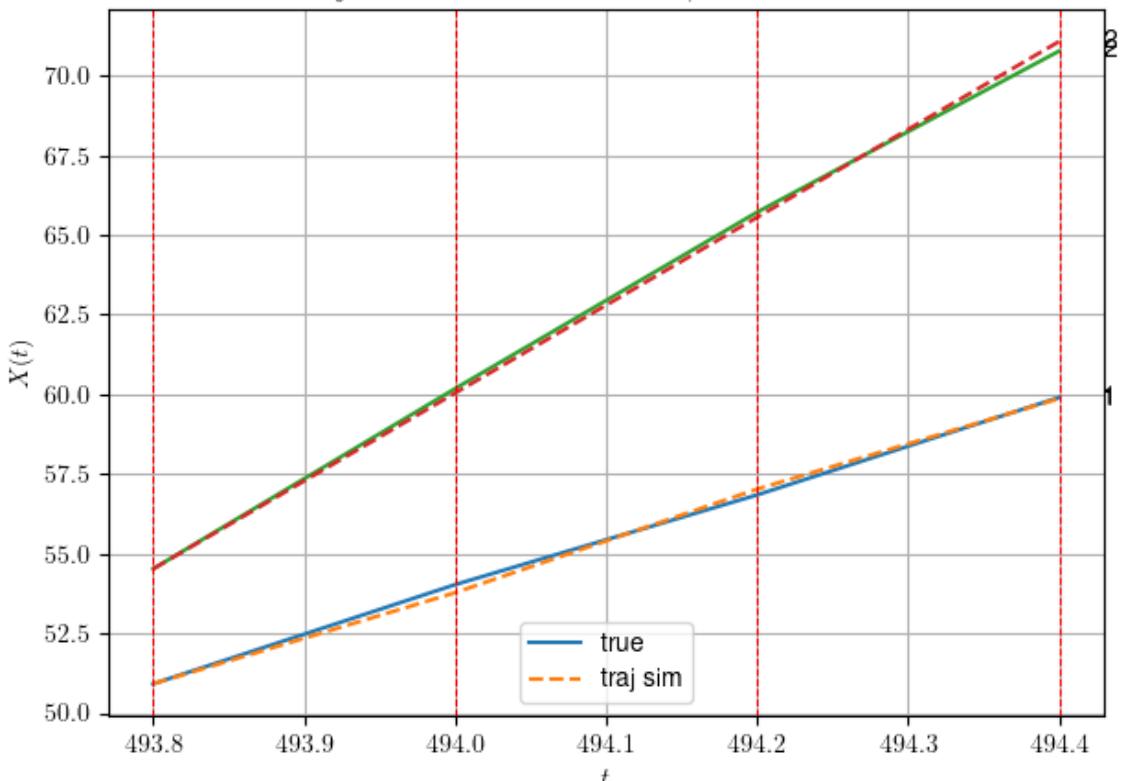
---

```
- Time interval n.2: [494.20, 494.40]
* y_true: [15.28601816]
* v_ann: [14.204191207885742, 27.57702754451529]
```

---

```
* err= 0.029171580192766177
* Learning rate NN = 0.0029524494893848896
* diff = 8.36666620801766e-05
```

*df n. 6 – Scene n. 42, at it = 500*



For scene 42/52

```
* use LR_NN=0.005 with err=0.9418414591416842 at it=24
* v0_scn_mean = 27.67394644271906
* MAE = 0.029171580192766177
```

---



---



---

*df n.6, scene n.43/52*

---



---



---



---



---



---

We have 4 time intervals inside [507.40,508.20]  
- Time interval n.0: [507.40, 507.60]

```
* y_true: [7.25036781]
* v_ann: [14.082423210144043, 12.08301425734479]
```

---

```
- Time interval n.1: [507.60, 507.80]
* y_true: [12.82075121]
* v_ann: [14.039485931396484, 12.08301425734479]
```

---

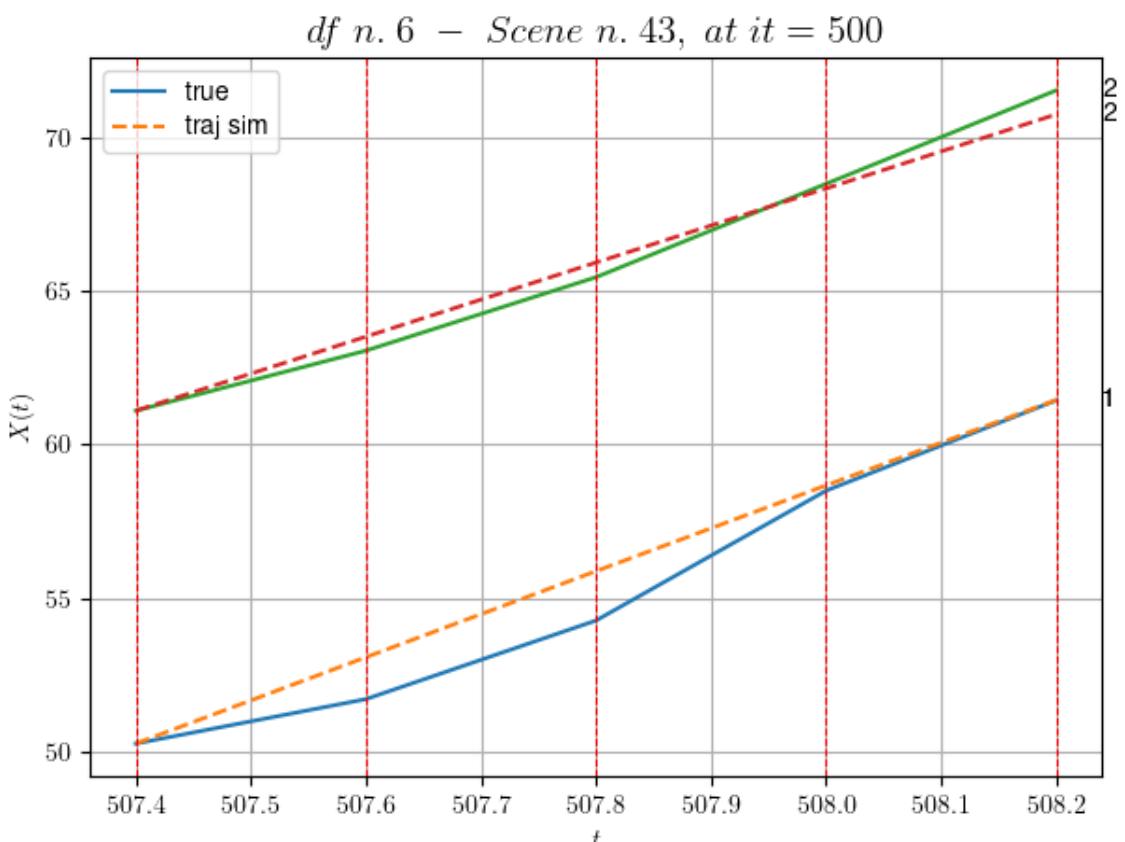
```
- Time interval n.2: [507.80, 508.00]
* y_true: [21.1763263]
* v_ann: [13.989072799682617, 12.08301425734479]
```

---

```
- Time interval n.3: [508.00, 508.20]
* y_true: [14.72594635]
* v_ann: [13.926871299743652, 12.08301425734479]
```

---

```
* err= 0.5562149735142804
* Learning rate NN = 2.3914839403005317e-05
* diff = 0.0006179050474859338
```



For scene 43/52

```
* use LR_NN=5e-05 with err=37.50777512979867 at it=24
* v0_scn_mean = 12.799693686914017
* MAE = 0.5439698561248856
```

df n.6, scene n.44/52

We have 2 time intervals inside [530.40,530.80]

- Time interval n.0: [530.40, 530.60]
    - \* y\_true: [25.58040667]
    - \* v\_ann: [24.60211753845215, 22.9]

- Time interval n.1: [530.60, 530.80]

- \* y\_true: [23.26050296]

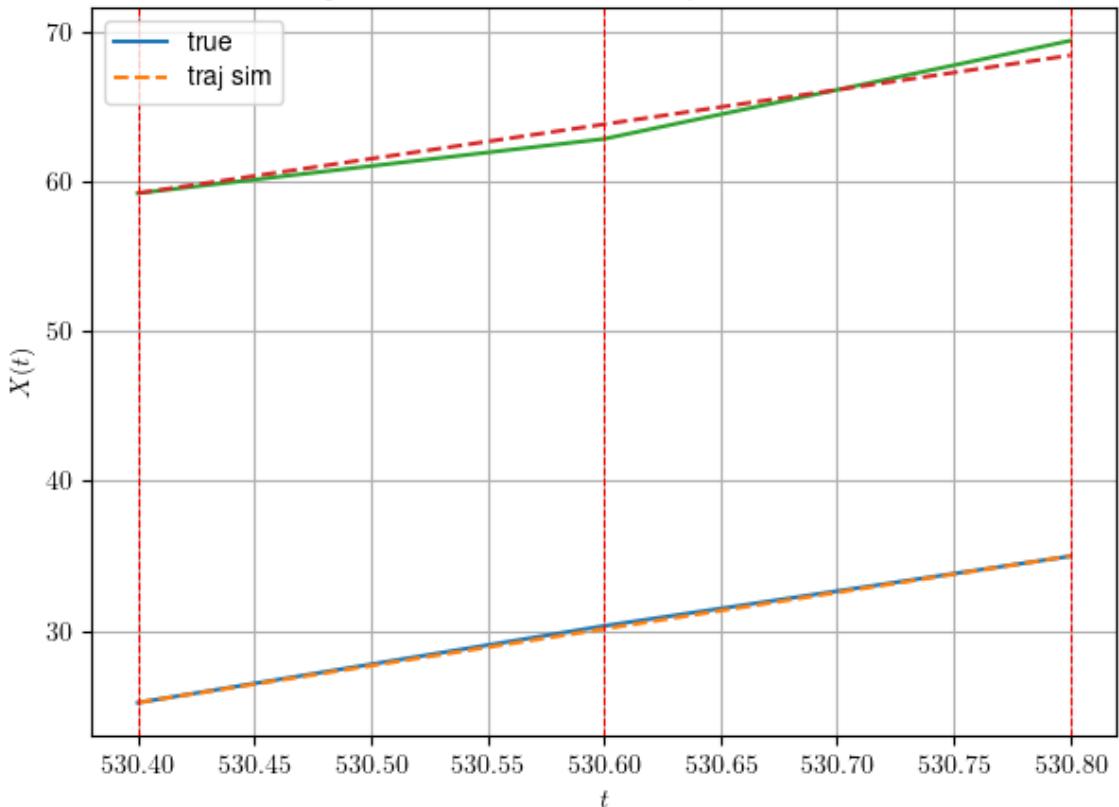
- \* v\_ann: [24.28067398071289, 22.991928031470234]

\* err= 0.3239762657686233

\* Learning rate NN = 3.6449993785936385e-05

\* diff = 6.531689819067044e-06

*df n. 6 – Scene n. 44, at it = 500*



For scene 44/52

\* use LR\_NN=5e-05 with err=1.5016803825066496 at it=24  
\* v0\_scn\_mean = 23.272250910158636  
\* MAE = 0.29298261624064814

df n.6, scene n.45/52

We have 3 time intervals inside [551.40, 552.00]

- Time interval n.0: [551.40, 551.60]
    - \* y\_true: [26.08674174]
    - \* v\_ann: [30.684450149536133, 18.102658549475546]

- Time interval n.1: [551.60, 551.80]

- ```
* y_true: [30.06264682]
* v_ann: [25.055191040039062, 18.102658549475546]
```

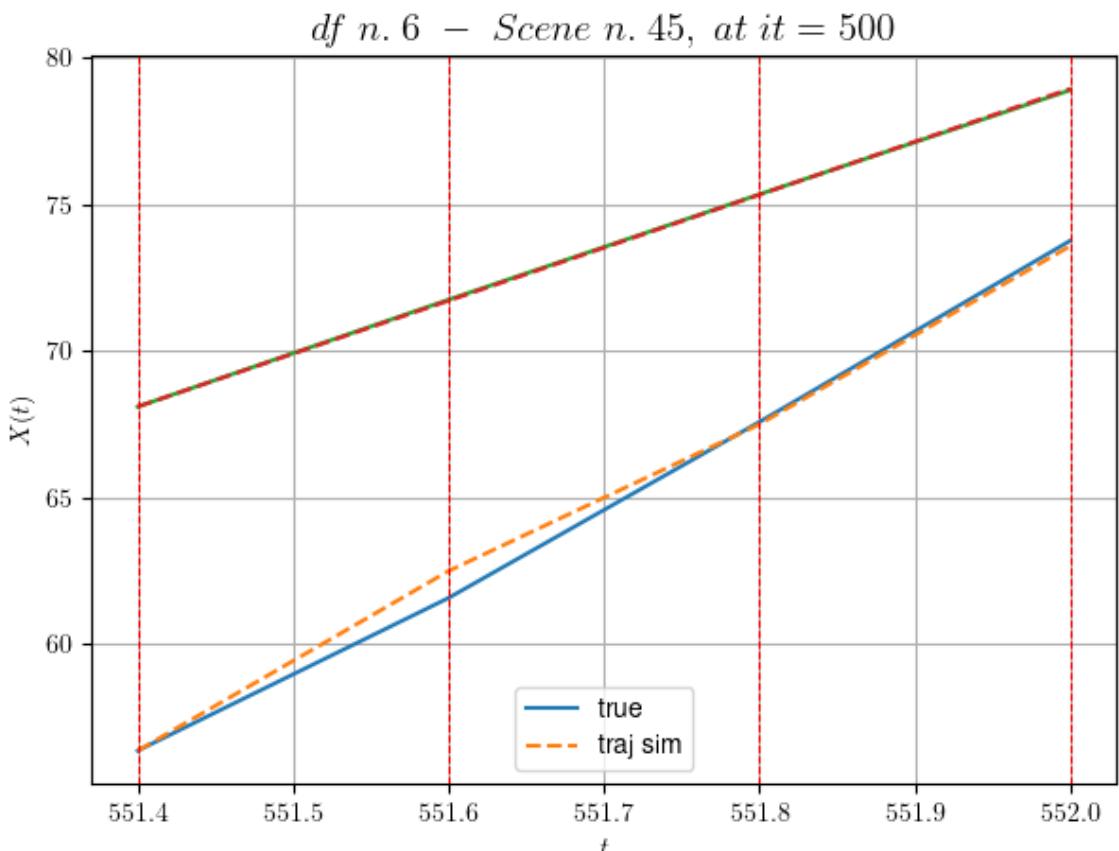
- Time interval n.2: [551.80, 552.00]

- ```
* y_true: [30.95284603]
* v_ann: [30.453516006469727, 18.102658549475546]
```

\* err= 0.11111933952551326

\* Learning rate NN = 0.0005904899444431067

\* diff = 0.018424068371669183



For scene 45/52

- \* use LR\_NN=0.001 with err=11.57354890016137 at it=24  
\* v0\_scn\_mean = 18.57855220740536  
\* MAE = 0.11111933952551326

df n.6. scene n.46/52

```
=====
We have 8 time intervals inside [576.00,577.60]
- Time interval n.0: [576.00, 576.20]
 * y_true: [15.84021031]
 * v_ann: [18.170759201049805, 21.30103062024147]

- Time interval n.1: [576.20, 576.40]
 * y_true: [20.27538477]
 * v_ann: [18.387989044189453, 21.30103062024147]

- Time interval n.2: [576.40, 576.60]
 * y_true: [21.925472]
 * v_ann: [19.26054573059082, 21.30103062024147]

- Time interval n.3: [576.60, 576.80]
 * y_true: [20.1105654]
 * v_ann: [19.919363021850586, 21.30103062024147]

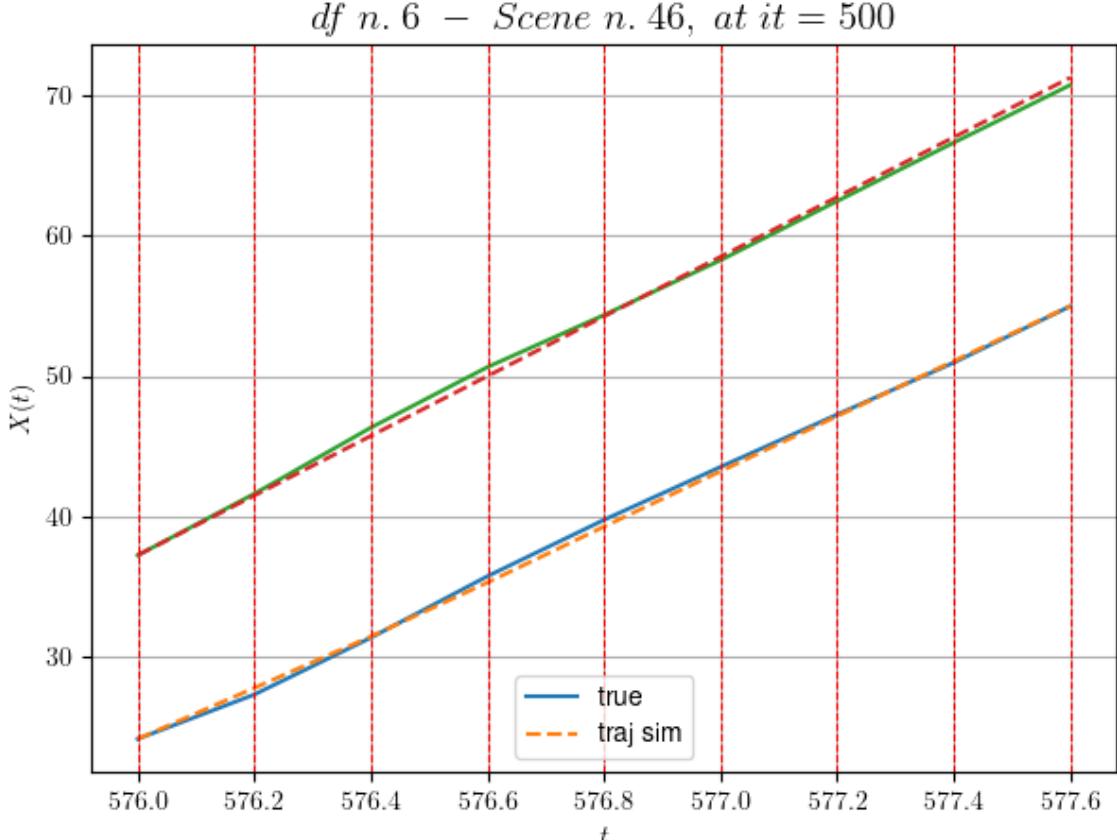
- Time interval n.4: [576.80, 577.00]
 * y_true: [18.90062767]
 * v_ann: [19.770191192626953, 21.30103062024147]

- Time interval n.5: [577.00, 577.20]
 * y_true: [18.67576455]
 * v_ann: [19.628934860229492, 21.30103062024147]

- Time interval n.6: [577.20, 577.40]
 * y_true: [18.5258558]
 * v_ann: [19.68038558959961, 21.30103062024147]

- Time interval n.7: [577.40, 577.60]
 * y_true: [20.11613418]
 * v_ann: [19.65915870666504, 21.30103062024147]

* err= 0.11901298200805879
* Learning rate NN = 0.00020589104678947479
* diff = 0.00028944031963612504
```



For scene 46/52

- \* use LR\_NN=0.001 with err=35.62376527946751 at it=24
- \* v0\_scn\_mean = 21.64898939536603
- \* MAE = 0.11260847200188032

---



---

df n.6, scene n.47/52

---



---

We have 3 time intervals inside [585.60, 586.20]

- Time interval n.0: [585.60, 585.80]
  - \* y\_true: [18.50110458]
  - \* v\_ann: [23.053543090820312, 24.542073255090546]

---

- Time interval n.1: [585.80, 586.00]
  - \* y\_true: [26.55213972]
  - \* v\_ann: [25.00286102294922, 24.542073255090546]

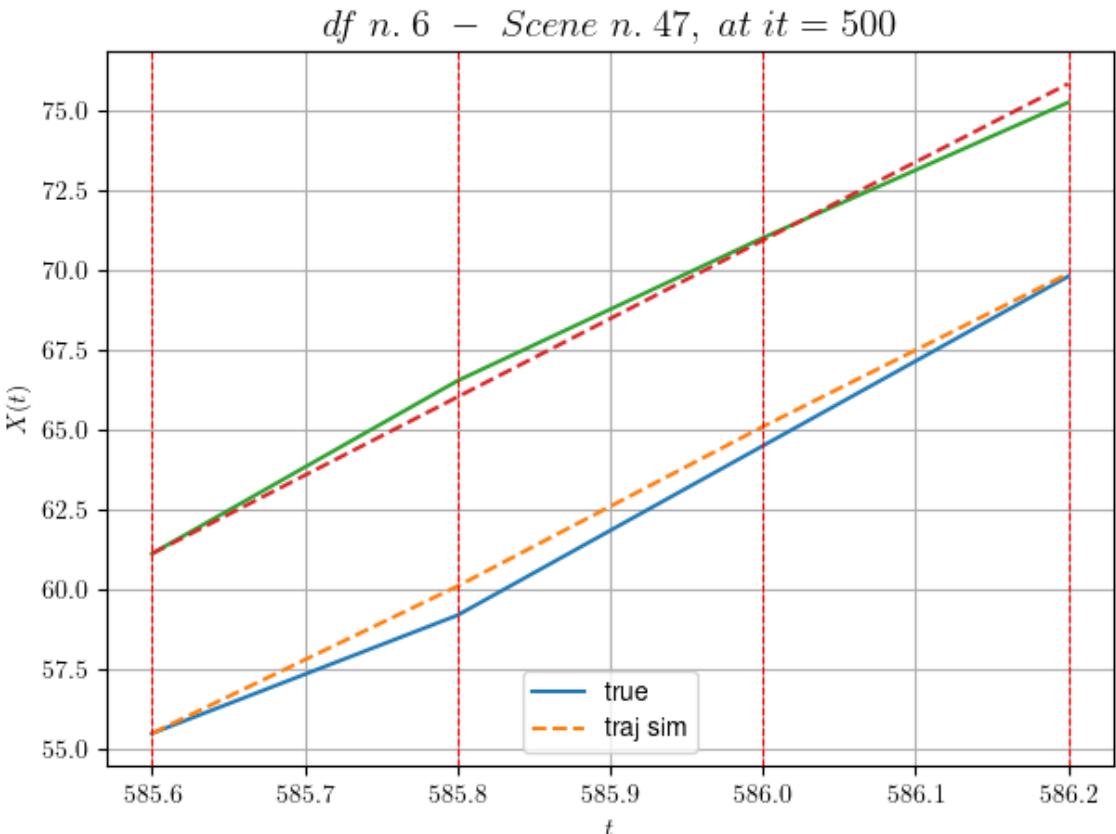
---

- Time interval n.2: [586.00, 586.20]
  - \* y\_true: [26.55213972]
  - \* v\_ann: [23.979778289794922, 24.542073255090546]

---

- \* err= 0.22531375087738328
- \* Learning rate NN = 0.0002952449722215533

\* diff = 0.00023701506994536214



For scene 47/52

- \* use LR\_NN=0.0005 with err=2.5530921288228288 at it=24
- \* v0\_scn\_mean = 24.760390324845133
- \* MAE = 0.2219882214434024

---



---

df n.6, scene n.48/52

---



---

We have 6 time intervals inside [593.40, 594.60]

- Time interval n.0: [593.40, 593.60]
  - \* y\_true: [20.11067815]
  - \* v\_ann: [22.83526039123535, 21.280809908317448]

---

- Time interval n.1: [593.60, 593.80]
  - \* y\_true: [18.13073933]
  - \* v\_ann: [23.19983673095703, 21.280809908317448]

---

- Time interval n.2: [593.80, 594.00]
  - \* y\_true: [23.23120854]
  - \* v\_ann: [23.275577545166016, 21.280809908317448]

---

- Time interval n.3: [594.00, 594.20]

```
* y_true: [28.4517039]
* v_ann: [21.521141052246094, 21.280809908317448]
```

---

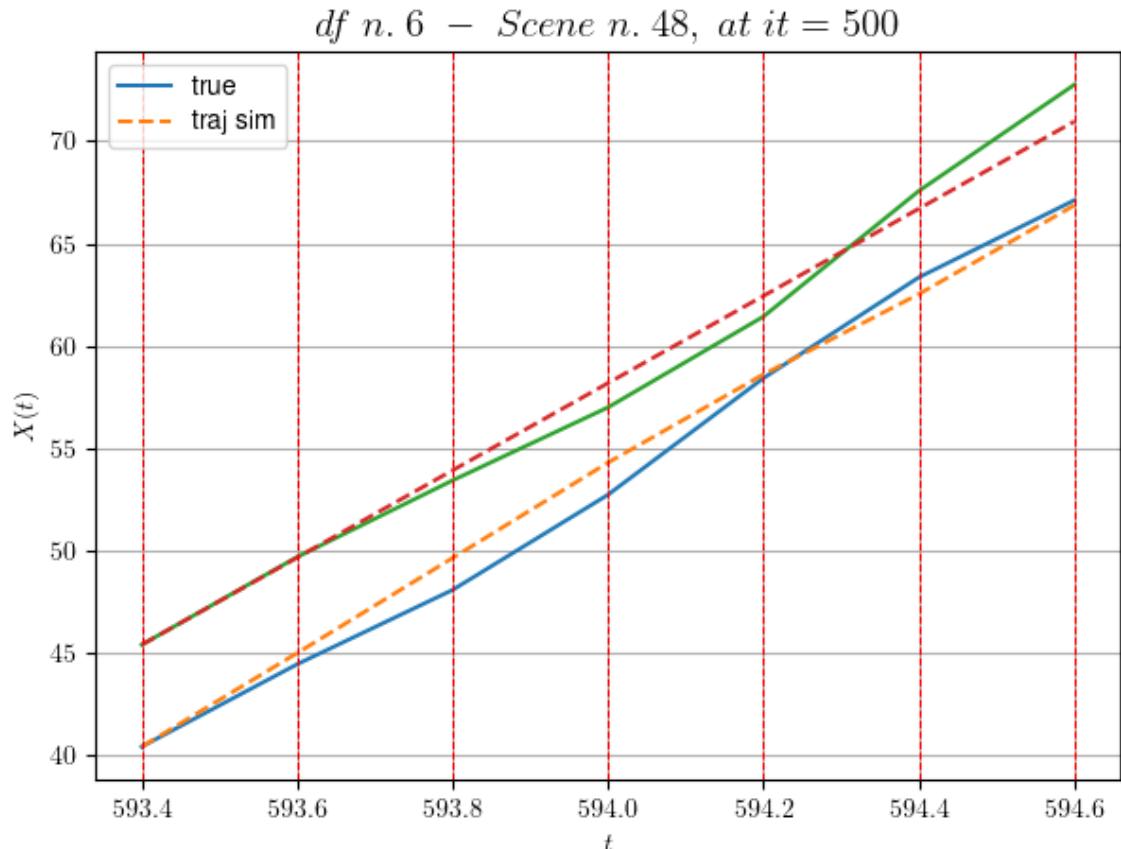
```
- Time interval n.4: [594.20, 594.40]
* y_true: [24.59163655]
* v_ann: [19.59284782409668, 21.280809908317448]
```

---

```
- Time interval n.5: [594.40, 594.60]
* y_true: [18.80153552]
* v_ann: [21.650781631469727, 21.280809908317448]
```

---

```
* err= 0.8981032519130696
* Learning rate NN = 3.138104875688441e-05
* diff = 0.004962699495473899
```



For scene 48/52

```
* use LR_NN=0.0001 with err=19.528811893173273 at it=24
* v0_scn_mean = 21.62957751191769
* MAE = 0.8981032519130696
```

---



---

df n.6, scene n.49/52

---



---



---



---

We have 3 time intervals inside [552.20,552.80]

```

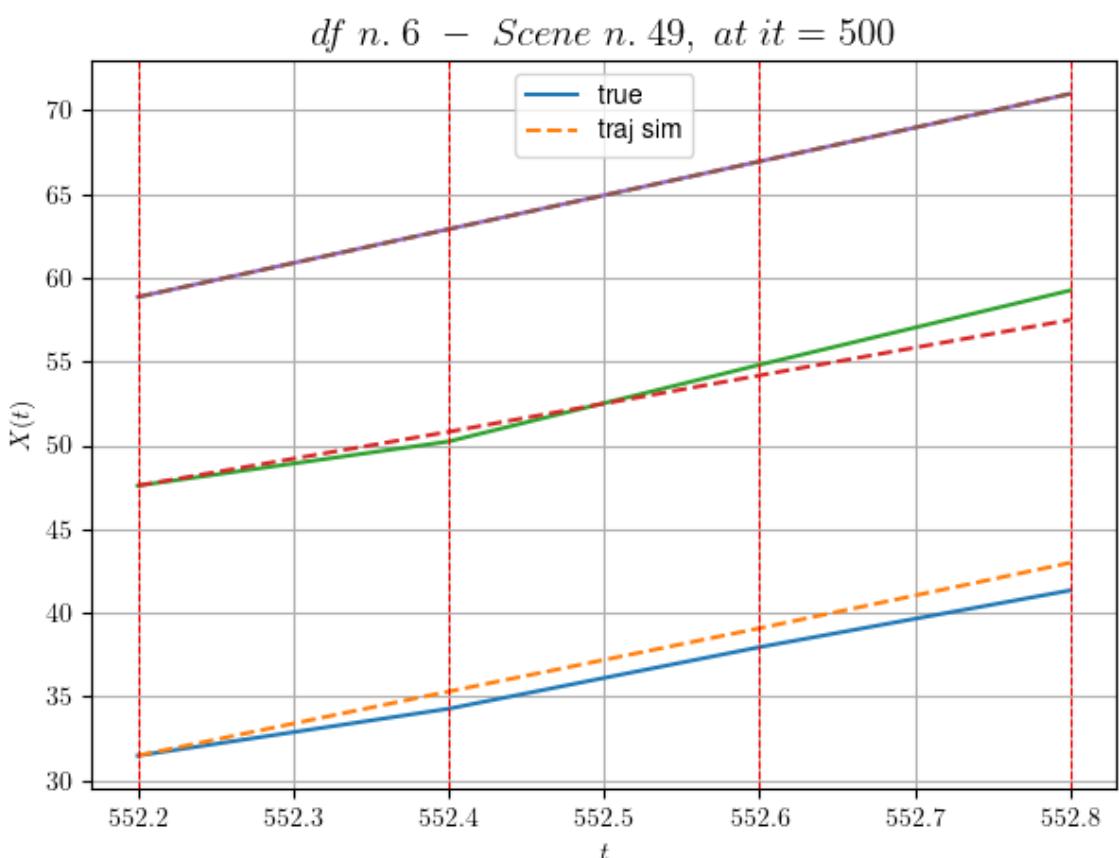
- Time interval n.0: [552.20, 552.40]
 * y_true: [14.01030513 13.18063102]
 * v_ann: [19.151683807373047, 16.07720375061035, 2
0.233205039552555]

- Time interval n.1: [552.40, 552.60]
 * y_true: [18.39048446 22.9012939]
 * v_ann: [18.889432907104492, 16.838706970214844, 2
0.233205039552555]

- Time interval n.2: [552.60, 552.80]
 * y_true: [16.95052919 22.22132939]
 * v_ann: [19.562610626220703, 16.58816146850586, 2
0.233205039552555]

* err= 0.7406436173260583
* Learning rate NN = 2.952449540316593e-05
* diff = 0.002356055433399451

```



For scene 49/52

```

* use LR_NN=5e-05 with err=5.85577792479318 at it=24
* v0_scn_mean = 20.819212298671133
* MAE = 0.7406436173260583

```

```
df n.6, scene n.50/52
```

---



---

We have 2 time intervals inside [553.00,553.40]

- Time interval n.0: [553.00, 553.20]

- \* y\_true: [23.0804555 19.17546127 18.9008181 ]

- \* v\_ann: [19.2283935546875, 19.0291748046875, 18.79  
713249206543, 23.748812608935317]

---

- Time interval n.1: [553.20, 553.40]

- \* y\_true: [22.02058024 17.45053567 16.85079909]

- \* v\_ann: [19.764272689819336, 20.068531036376953, 2  
0.409835815429688, 23.748812608935317]

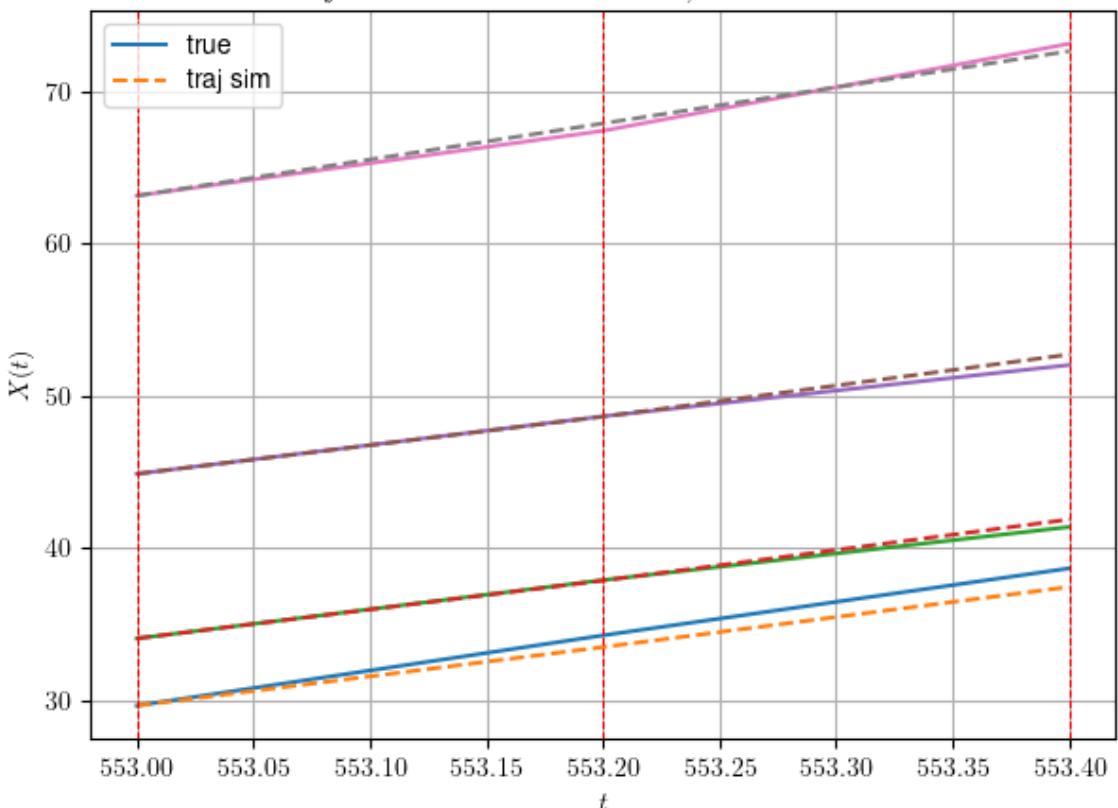
---

- \* err= 0.27337486046317827

- \* Learning rate NN = 0.0007289999630302191

- \* diff = 3.923422825624634e-05

*df n. 6 – Scene n. 50, at it = 500*



For scene 50/52

- \* use LR\_NN=0.001 with err=5.475480366020187 at it=24

- \* v0\_scn\_mean = 24.248887258030706

- \* MAE = 0.27337486046317827

---



---

```
df n.6, scene n.51/52
```

---



---

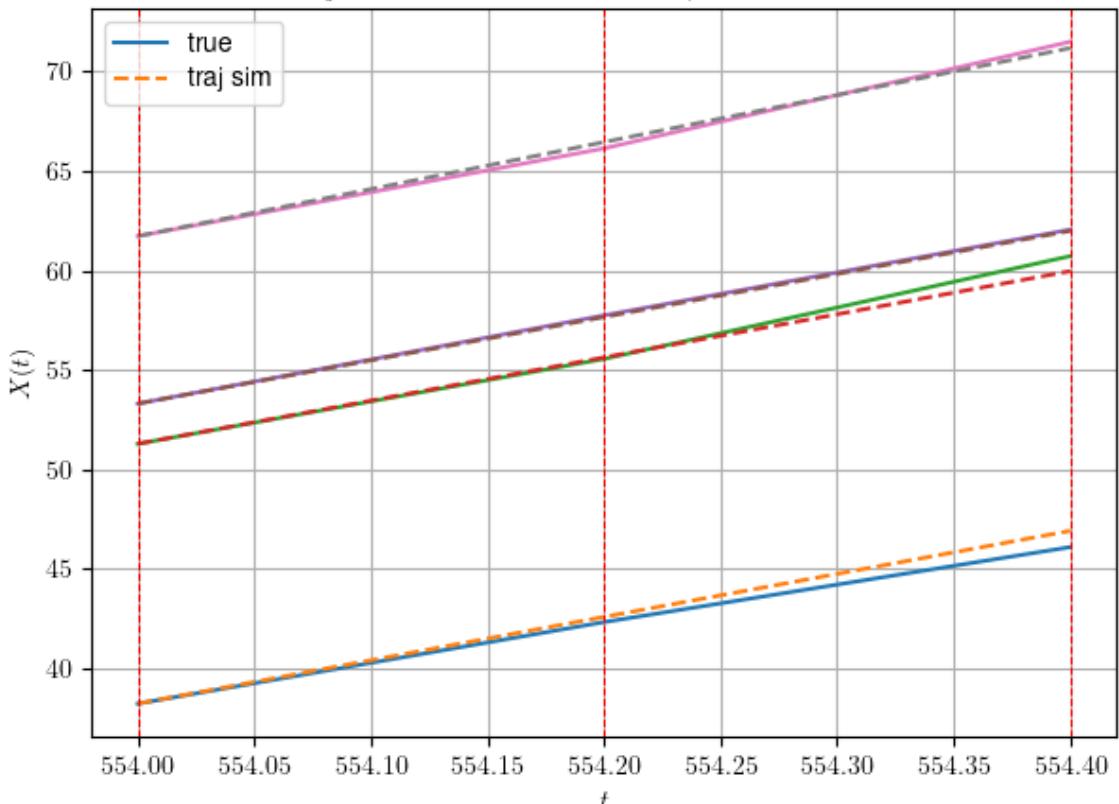
We have 2 time intervals inside [554.00, 554.40]

- Time interval n.0: [554.00, 554.20]
    - \* y\_true: [20.50061186 21.35116733 22.20133365]
    - \* v\_ann: [21.810657501220703, 21.742990493774414, 21.7822322845459, 23.647050620328784]
- 

- Time interval n.1: [554.20, 554.40]
    - \* y\_true: [18.86075328 25.85180384 21.5614577 ]
    - \* v\_ann: [21.642776489257812, 21.6832332611084, 21.660518646240234, 23.647050620328784]
- 

- \* err= 0.1273809673333557
- \* Learning rate NN = 0.00036449998151510954
- \* diff = 2.5562134879086873e-06

*df n. 6 – Scene n. 51, at it = 500*



For scene 51/52

- \* use LR\_NN=0.0005 with err=5.567445783283985 at it=24
  - \* v0\_scn\_mean = 24.155265897367478
  - \* MAE = 0.12595088738984322
- 
- 

For df=6 with 52 scenes, time taken: 974.33

\*\*\*\*\*  
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In df n.7/10 we have 30 scenes

```
df n.7, scene n.0/30
```

```
=====
=====
```

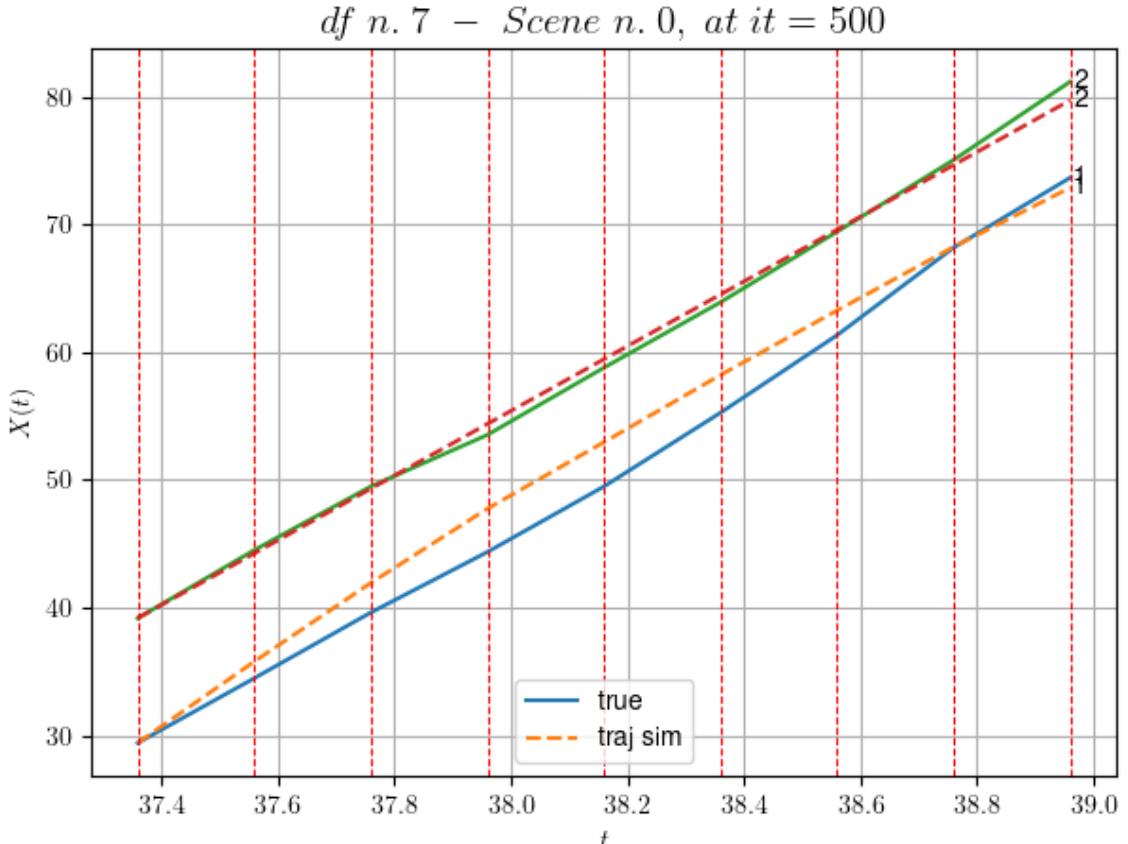
We have 8 time intervals inside [37.36,38.96]

- Time interval n.0: [37.36, 37.56]
  - \* y\_true: [25.35701236]
  - \* v\_ann: [31.886642456054688, 25.361418058283434]
  
- Time interval n.1: [37.56, 37.76]
  - \* y\_true: [25.73989368]
  - \* v\_ann: [30.81504249572754, 25.361418058283434]
  
- Time interval n.2: [37.76, 37.96]
  - \* y\_true: [23.71210977]
  - \* v\_ann: [29.053747177124023, 25.361418058283434]
  
- Time interval n.3: [37.96, 38.16]
  - \* y\_true: [25.66543151]
  - \* v\_ann: [26.08146095275879, 25.361418058283434]
  
- Time interval n.4: [38.16, 38.36]
  - \* y\_true: [28.90912072]
  - \* v\_ann: [26.304004669189453, 25.361418058283434]
  
- Time interval n.5: [38.36, 38.56]
  - \* y\_true: [30.37297243]
  - \* v\_ann: [25.2899112701416, 25.361418058283434]
  
- Time interval n.6: [38.56, 38.76]
  - \* y\_true: [34.29923068]
  - \* v\_ann: [24.873554229736328, 25.361418058283434]
  
- Time interval n.7: [38.76, 38.96]
  - \* y\_true: [27.40980382]
  - \* v\_ann: [23.23369026184082, 25.361418058283434]

```
=====
=====
```

\* err= 2.6480434367296284  
\* Learning rate NN = 0.00020589104678947479  
\* diff = 0.06201540611732703



For scene 0/30

```
* use LR_NN=0.001 with err=10.538373293279466 at it=24
* v0_scn_mean = 25.546961335916635
* MAE = 1.6485309025780865
```

---



---

df n.7, scene n.1/30

---



---

We have 3 time intervals inside [43.16, 43.76]

- Time interval n.0: [43.16, 43.36]
  - \* y\_true: [28.21793458]
  - \* v\_ann: [31.52472496032715, 25.959463570058293]

---

- Time interval n.1: [43.36, 43.56]
  - \* y\_true: [32.07362933]
  - \* v\_ann: [28.874149322509766, 25.959463570058293]

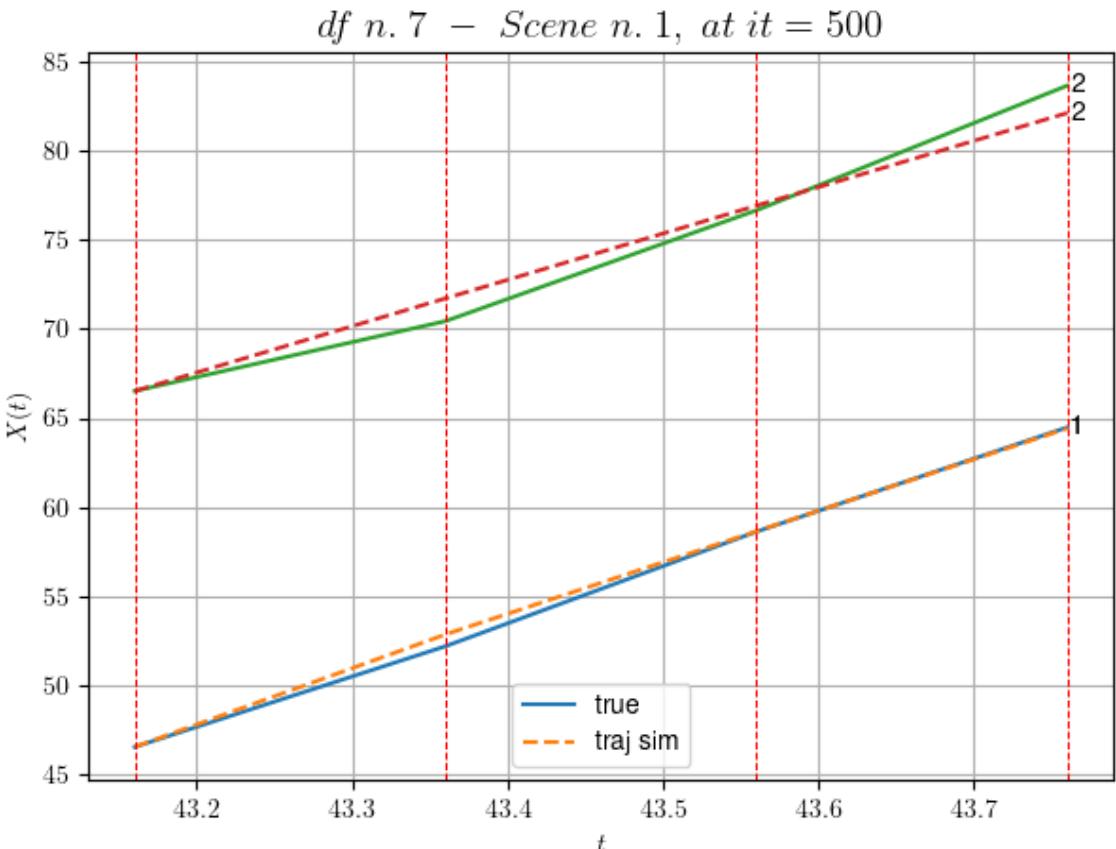
---

- Time interval n.2: [43.56, 43.76]
  - \* y\_true: [29.22963958]
  - \* v\_ann: [28.81351661682129, 25.959463570058293]

---

```
* err= 0.5612134672080421
* Learning rate NN = 2.952449540316593e-05
```

\* diff = 6.0947067845207314e-05



For scene 1/30

\* use LR\_NN=5e-05 with err=1.1456985213537236 at it=24  
 \* v0\_scn\_mean = 26.121085027225103  
 \* MAE = 0.4941409434786612

---



---

df n.7, scene n.2/30

---



---

We have 7 time intervals inside [44.96, 46.36]

- Time interval n.0: [44.96, 45.16]
  - \* y\_true: [26.28719925]
  - \* v\_ann: [27.906757354736328, 26.657757035933628]

---

- Time interval n.1: [45.16, 45.36]
  - \* y\_true: [30.92729896]
  - \* v\_ann: [26.309911727905273, 26.657757035933628]

---

- Time interval n.2: [45.36, 45.56]
  - \* y\_true: [23.73776955]
  - \* v\_ann: [26.25609016418457, 26.657757035933628]

---

- Time interval n.3: [45.56, 45.76]

```
* y_true: [24.51414777]
* v_ann: [26.703155517578125, 26.657757035933628]
```

---

```
- Time interval n.4: [45.76, 45.96]
* y_true: [26.52798583]
* v_ann: [26.50967788696289, 26.657757035933628]
```

---

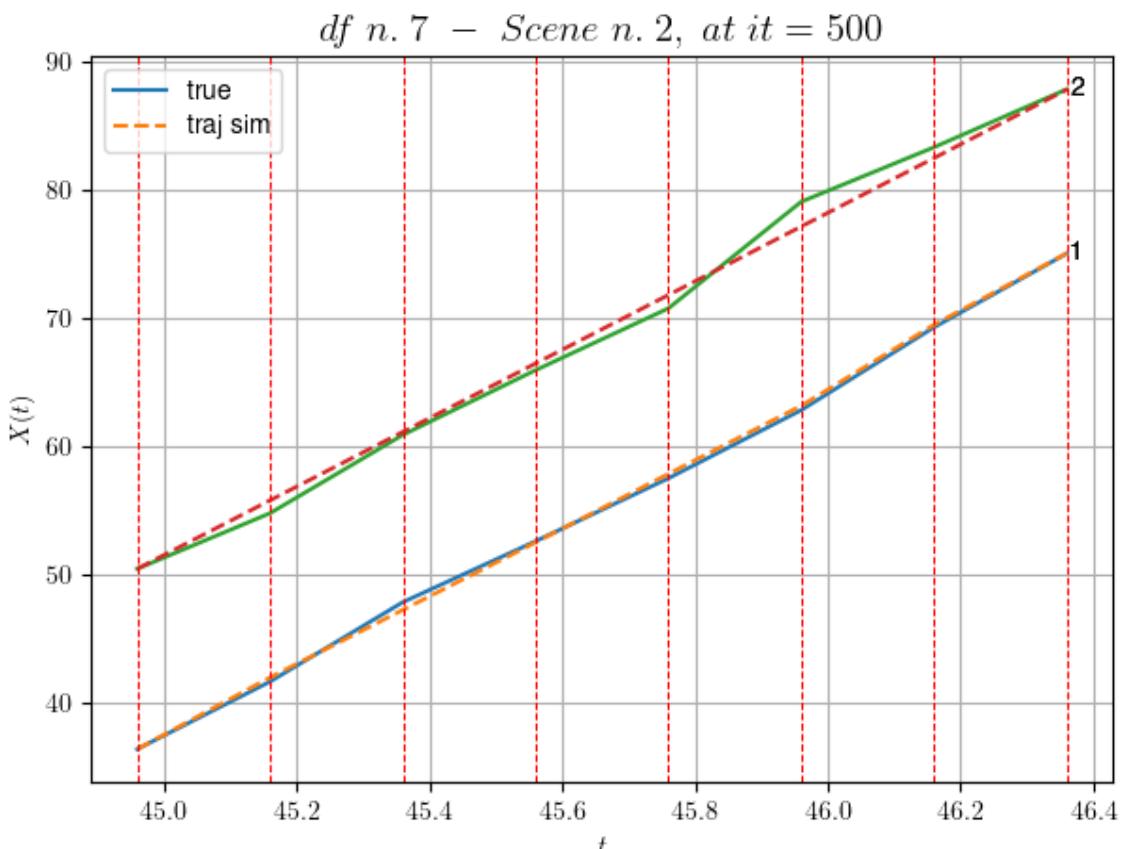
```
- Time interval n.5: [45.96, 46.16]
* y_true: [32.24792255]
* v_ann: [31.54834747314453, 26.657757035933628]
```

---

```
- Time interval n.6: [46.16, 46.36]
* y_true: [28.76269973]
* v_ann: [27.85429573059082, 26.657757035933628]
```

---

```
* err= 0.47372907351874227
* Learning rate NN = 1.2709323527815286e-05
* diff = 0.0001580099417419767
```



For scene 2/30

```
* use LR_NN=5e-05 with err=3.7374082300147373 at it=24
* v0_scn_mean = 26.791446754470687
* MAE = 0.45064163222792025
```

```
df n.7, scene n.3/30
```

```
=====
===== We have 5 time intervals inside [51.36,52.36]
- Time interval n.0: [51.36, 51.56]
 * y_true: [23.57882573]
 * v_ann: [28.04522705078125, 25.15874060713297]
```

```

----- - Time interval n.1: [51.56, 51.76]
 * y_true: [24.23722079]
 * v_ann: [29.157270431518555, 25.15874060713297]
```

```

----- - Time interval n.2: [51.76, 51.96]
 * y_true: [33.24501337]
 * v_ann: [29.815317153930664, 25.15874060713297]
```

```

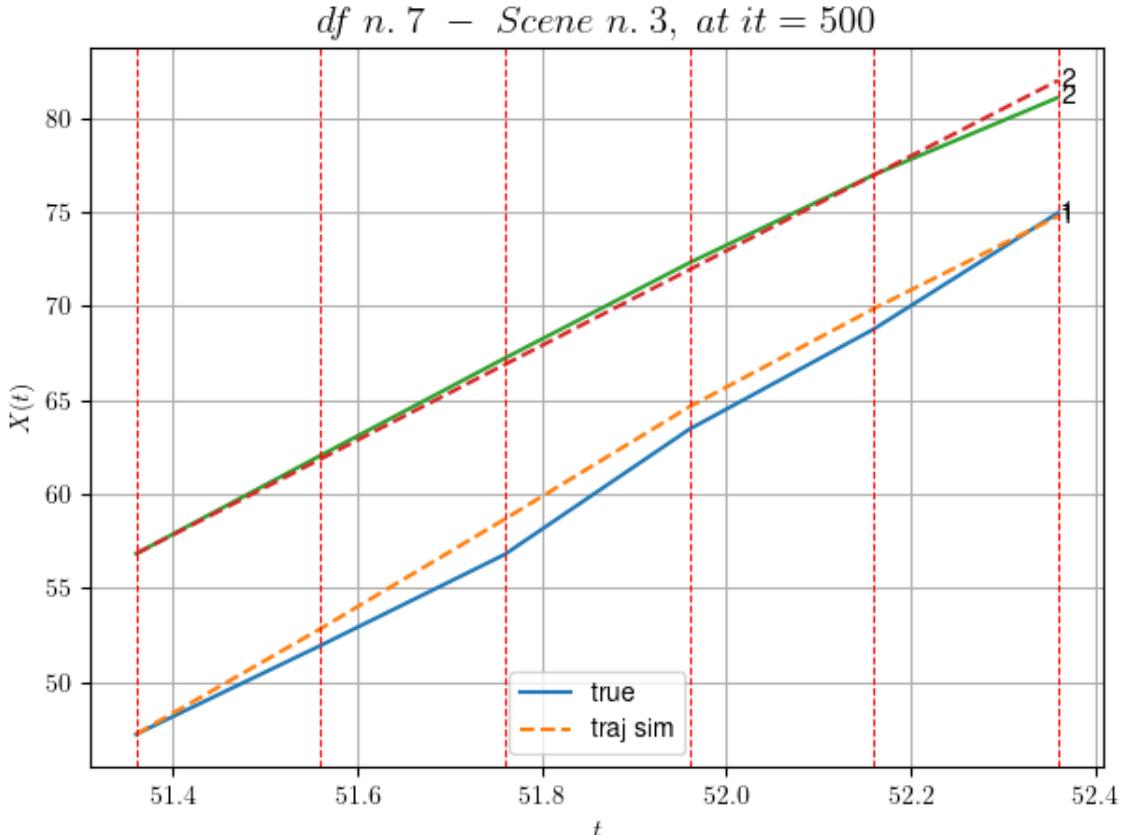
----- - Time interval n.3: [51.96, 52.16]
 * y_true: [26.6110662]
 * v_ann: [26.10198402404785, 25.15874060713297]
```

```

----- - Time interval n.4: [52.16, 52.36]
 * y_true: [30.92040212]
 * v_ann: [24.563961029052734, 25.15874060713297]
```

```

----- * err= 0.6716466237231291
* Learning rate NN = 1.9371018424862996e-05
* diff = 0.001577420902852511
```



For scene 3/30

- \* use LR\_NN=5e-05 with err=5.199382337038205 at it=24
- \* v0\_scn\_mean = 25.352390982810576
- \* MAE = 0.6697709637353907

---



---

df n.7, scene n.4/30

---



---

We have 5 time intervals inside [60.56, 61.56]

- Time interval n.0: [60.56, 60.76]
  - \* y\_true: [22.61948097]
  - \* v\_ann: [27.80809211730957, 25.527220166442998]

---

- Time interval n.1: [60.76, 60.96]
  - \* y\_true: [23.0211989]
  - \* v\_ann: [28.529569625854492, 25.527220166442998]

---

- Time interval n.2: [60.96, 61.16]
  - \* y\_true: [33.01460981]
  - \* v\_ann: [32.16835021972656, 25.527220166442998]

---

- Time interval n.3: [61.16, 61.36]
  - \* y\_true: [31.5149883]

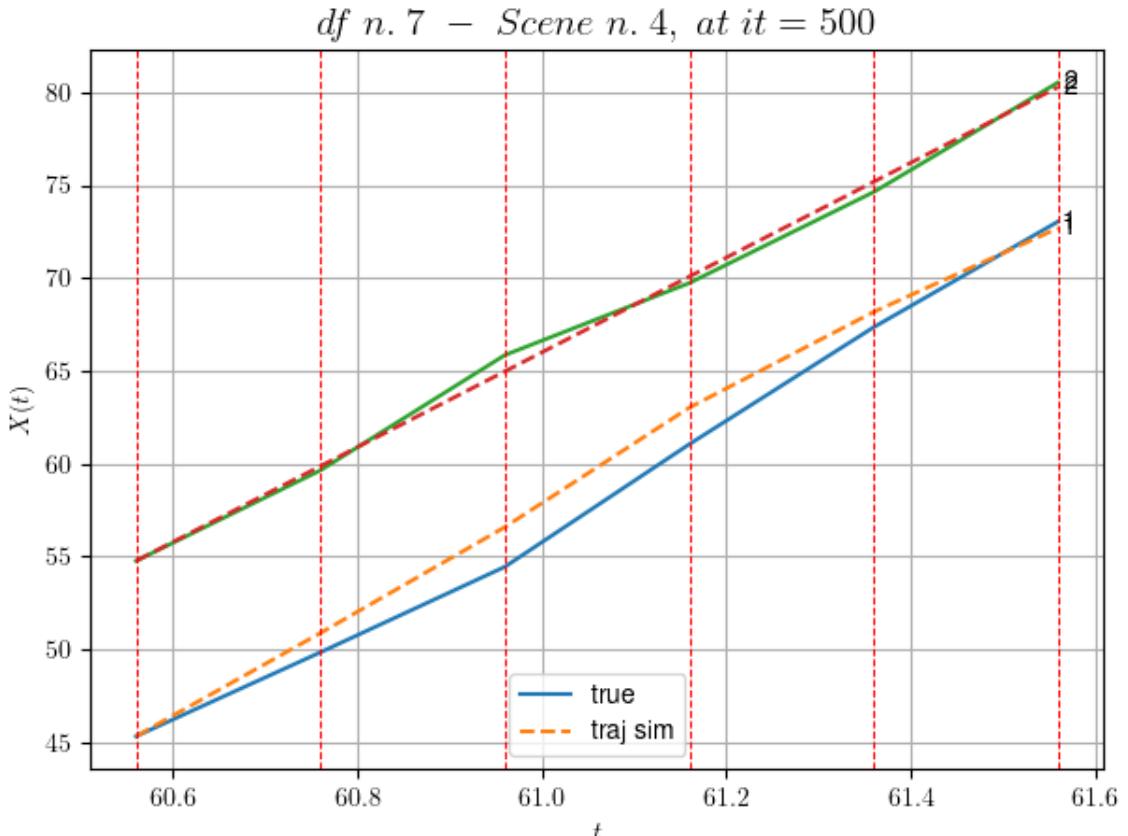
```
* v_ann: [25.78380012512207, 25.527220166442998]
```

---

```
- Time interval n.4: [61.36, 61.56]
* y_true: [28.46918699]
* v_ann: [22.57834815979004, 25.527220166442998]
```

---

```
* err= 0.9704152051933684
* Learning rate NN = 1.9371018424862996e-05
* diff = 0.002641991746377137
```



For scene 4/30

```
* use LR_NN=5e-05 with err=4.578586293058439 at it=24
* v0_scn_mean = 25.70613135975089
* MAE = 0.9693649394835773
```

---



---

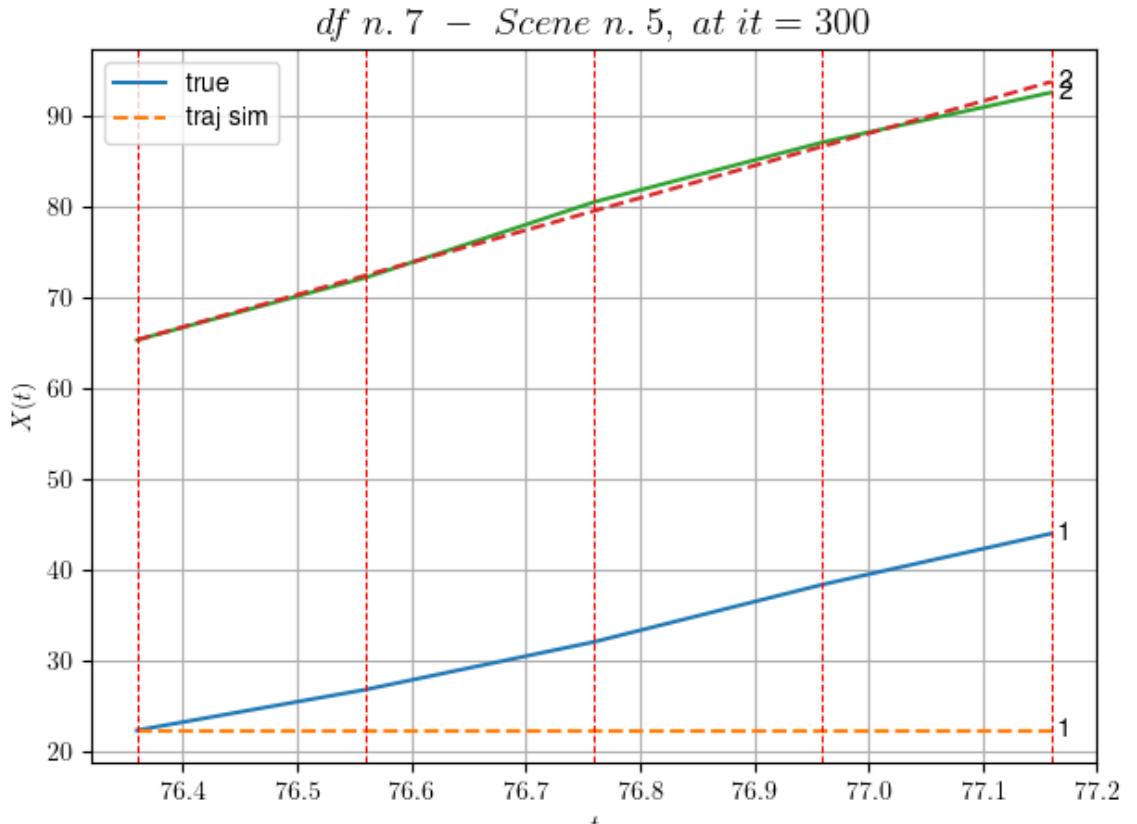
df n.7, scene n.5/30

---



---

```
We have 4 time intervals inside [76.36,77.16]
* err= 84.43515077169373
* Learning rate NN = 0.0003280499659013003
* diff = 9.055795402446165e-07
```



For scene 5/30

- \* use LR\_NN=0.0005 with err=3.613920477735833 at it=24
- \* v0\_scn\_mean = 35.167650043687274
- \* MAE = 49.41374188630299

---

---

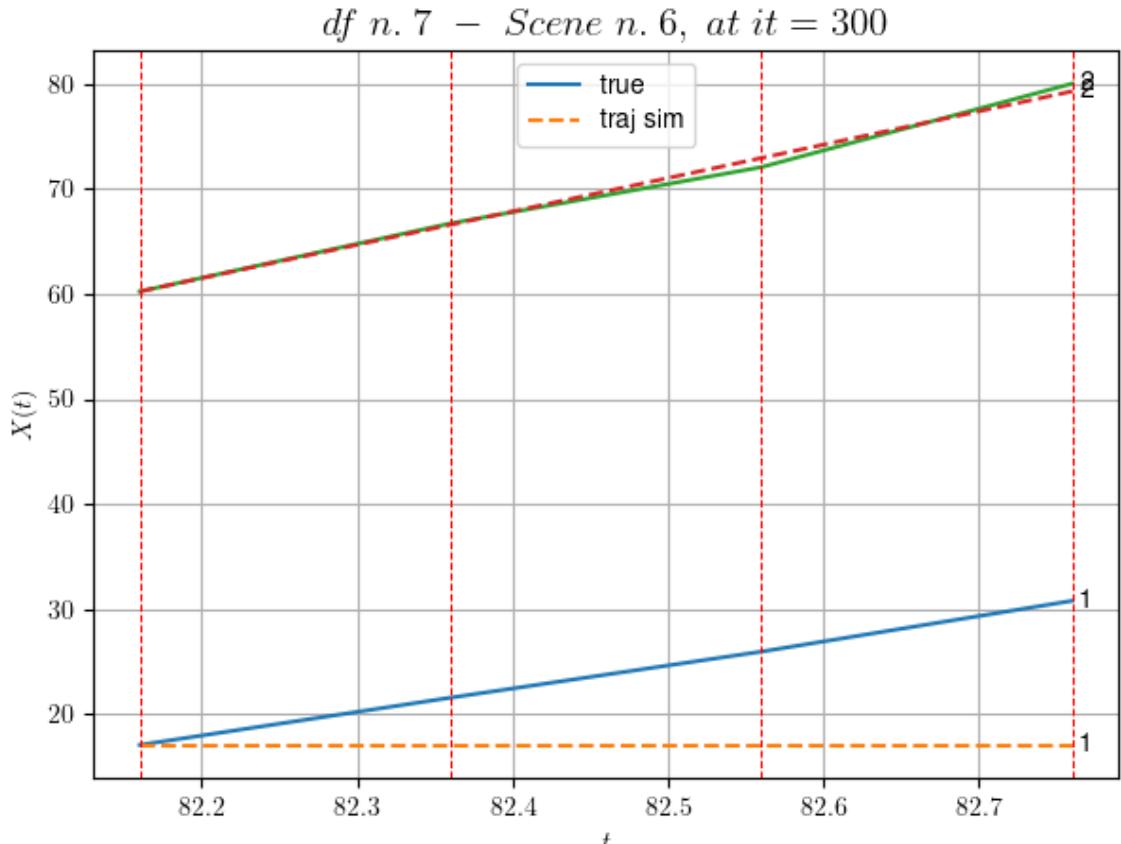
df n.7, scene n.6/30

---

---

We have 3 time intervals inside [82.16,82.76]

- \* err= 36.0744707716272
- \* Learning rate NN = 3.6449993785936385e-05
- \* diff = 1.3070737736597948e-07



For scene 6/30

- \* use LR\_NN=5e-05 with err=0.4342041820952273 at it=24
  - \* v0\_scn\_mean = 31.629068979293606
  - \* MAE = 36.0744707716272
- 
- 

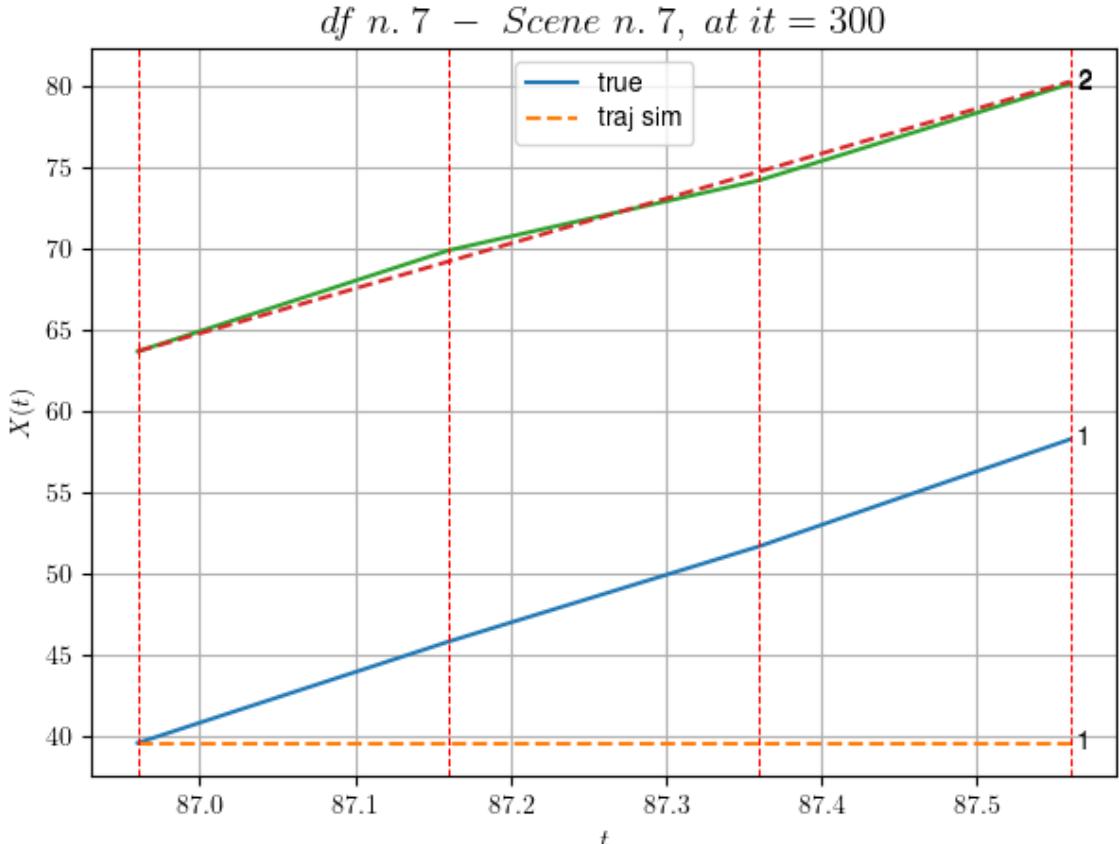
df n.7, scene n.7/30

---

---

We have 3 time intervals inside [86.96, 87.56]

- \* err= 66.75073009662975
- \* Learning rate NN = 3.6449993785936385e-05
- \* diff = 2.478155778362634e-07



For scene 7/30

- \* use LR\_NN=5e-05 with err=0.6430085034047885 at it=24
  - \* v0\_scn\_mean = 27.791075101786888
  - \* MAE = 66.75073009662975
- 
- 

df n.7, scene n.8/30

---



---

We have 3 time intervals inside [90.56, 91.16]

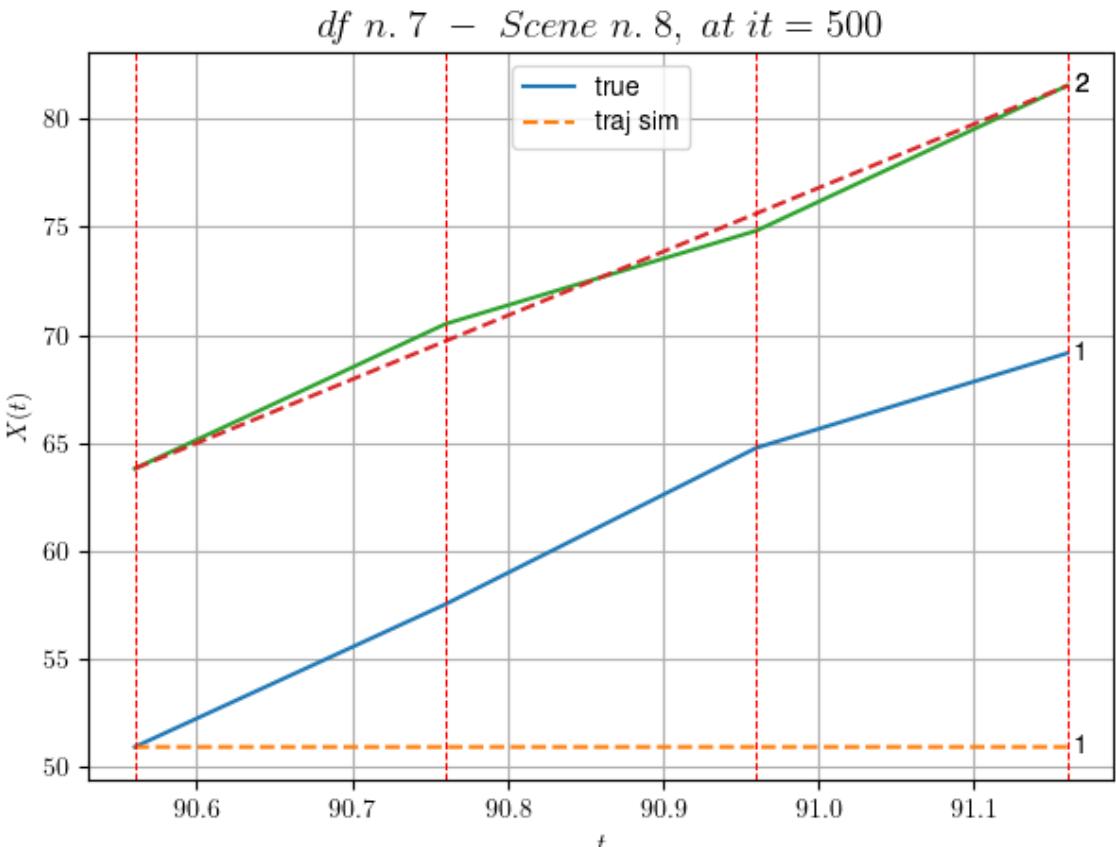
- Time interval n.0: [90.56, 90.76]
    - \* y\_true: [33.04453039]
    - \* v\_ann: [0.0019118944182991982, 29.53569419125617]
- 
- 

- Time interval n.1: [90.76, 90.96]
    - \* y\_true: [36.18763126]
    - \* v\_ann: [0.0018538858275860548, 29.53569419125617]
- 
- 

- Time interval n.2: [90.96, 91.16]
    - \* y\_true: [21.90135867]
    - \* v\_ann: [0.0051511009223759174, 29.53569419125617]
- 
- 

- \* err= 71.09879211480478
- \* Learning rate NN = 5.904899080633186e-05

\* diff = 0.0020974889189488977



For scene 8/30

\* use LR\_NN=0.0001 with err=0.244528133615702 at it=24  
 \* v0\_scn\_mean = 29.554266423602005  
 \* MAE = 71.09879211480478

---



---

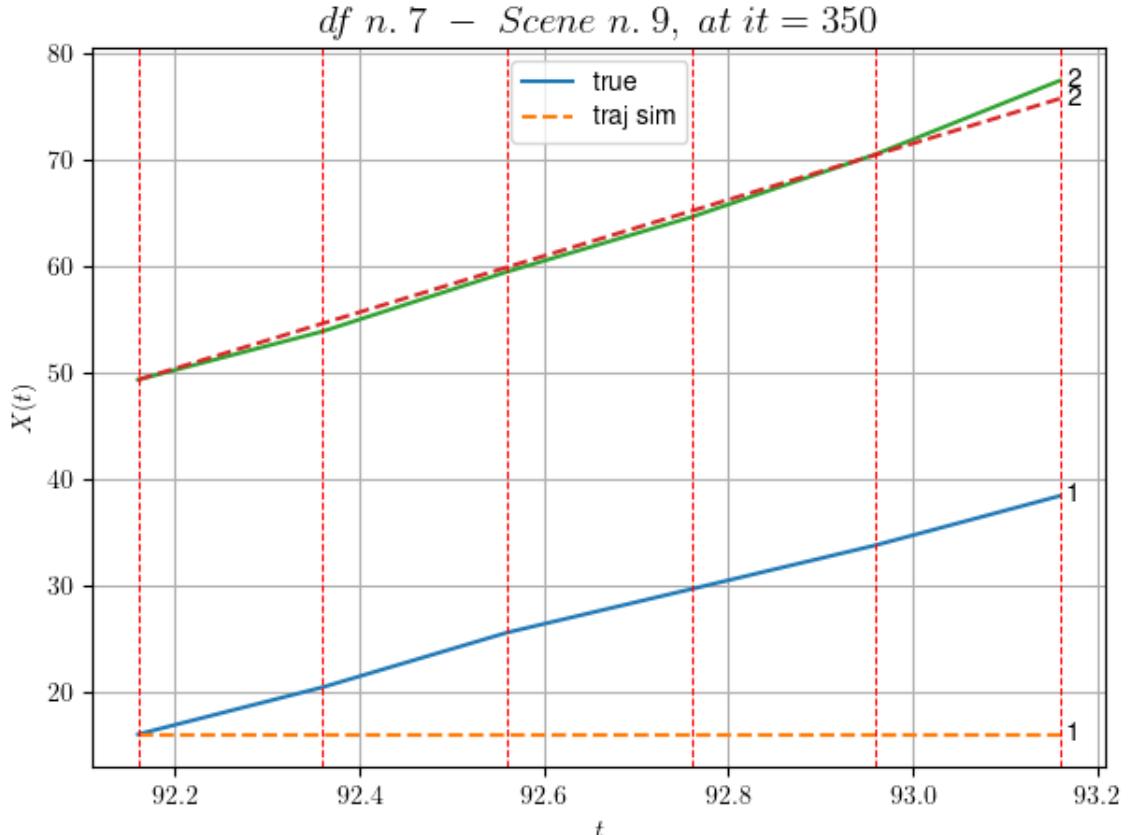
df n.7, scene n.9/30

---



---

We have 5 time intervals inside [92.16,93.16]  
 \* err= 93.09851188910164  
 \* Learning rate NN = 0.000265720474999398  
 \* diff = 1.0506283842914854e-07



For scene 9/30

- \* use LR\_NN=0.0005 with err=2.158776551140708 at it=24
- \* v0\_scn\_mean = 26.612164146896426
- \* MAE = 93.054924677701

---



---

df n.7, scene n.10/30

---



---

We have 7 time intervals inside [110.96, 112.36]

- Time interval n.0: [110.96, 111.16]
  - \* y\_true: [22.6227995]
  - \* v\_ann: [22.484201431274414, 27.676256807459104]

---

- Time interval n.1: [111.16, 111.36]
  - \* y\_true: [23.80055078]
  - \* v\_ann: [23.93242073059082, 27.676256807459104]

---

- Time interval n.2: [111.36, 111.56]
  - \* y\_true: [26.30746114]
  - \* v\_ann: [26.46722984313965, 27.676256807459104]

---

- Time interval n.3: [111.56, 111.76]
  - \* y\_true: [25.96075112]

```
* v_ann: [26.793163299560547, 27.676256807459104]
```

---

```
- Time interval n.4: [111.76, 111.96]
* y_true: [22.42440713]
* v_ann: [26.817033767700195, 27.676256807459104]
```

---

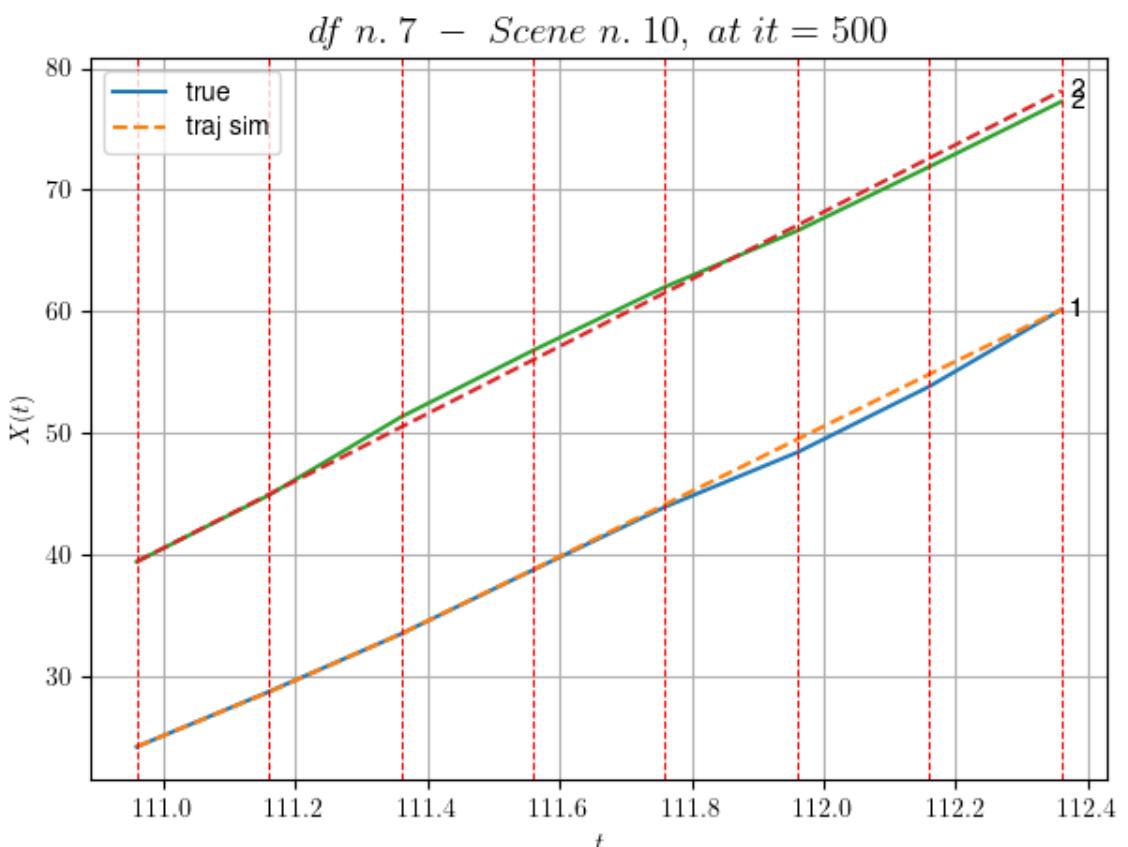
```
- Time interval n.5: [111.96, 112.16]
* y_true: [27.11798837]
* v_ann: [26.78877067565918, 27.676256807459104]
```

---

```
- Time interval n.6: [112.16, 112.36]
* y_true: [31.65227574]
* v_ann: [26.5728702545166, 27.676256807459104]
```

---

```
* err= 0.32679455769898
* Learning rate NN = 2.5418647055630572e-05
* diff = 0.0017351350937006016
```



For scene 10/30

```
* use LR_NN=0.0001 with err=2.701607127271367 at it=24
* v0_scn_mean = 27.76920653514304
* MAE = 0.260654258382888
```

```
df n.7, scene n.11/30
```

---



---

We have 3 time intervals inside [116.96, 117.56]

- Time interval n.0: [116.96, 117.16]

- \* y\_true: [29.80898437]

- \* v\_ann: [30.538118362426758, 14.981640724782363]

---

- Time interval n.1: [117.16, 117.36]

- \* y\_true: [21.49364724]

- \* v\_ann: [17.256790161132812, 14.981640724782363]

---

- Time interval n.2: [117.36, 117.56]

- \* y\_true: [11.41585007]

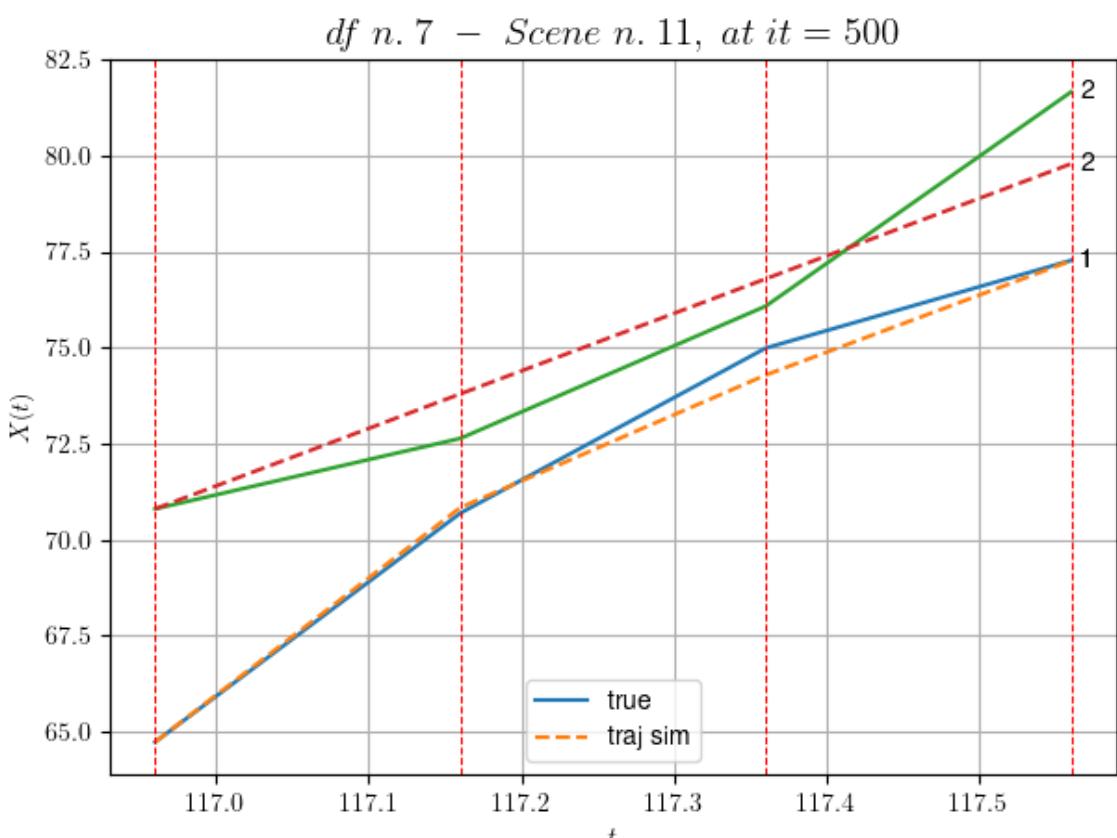
- \* v\_ann: [14.874556541442871, 14.981640724782363]

---

- \* err= 0.732793513388448

- \* Learning rate NN = 0.0005904899444431067

- \* diff = 0 00011128118294578826



For scene 11/30

- \* use LR\_NN=0.001 with err=14.603079366446567 at it=24

- \* v0\_scn\_mean = 15.582375095676216

- \* MAE = 0.7317014045073982

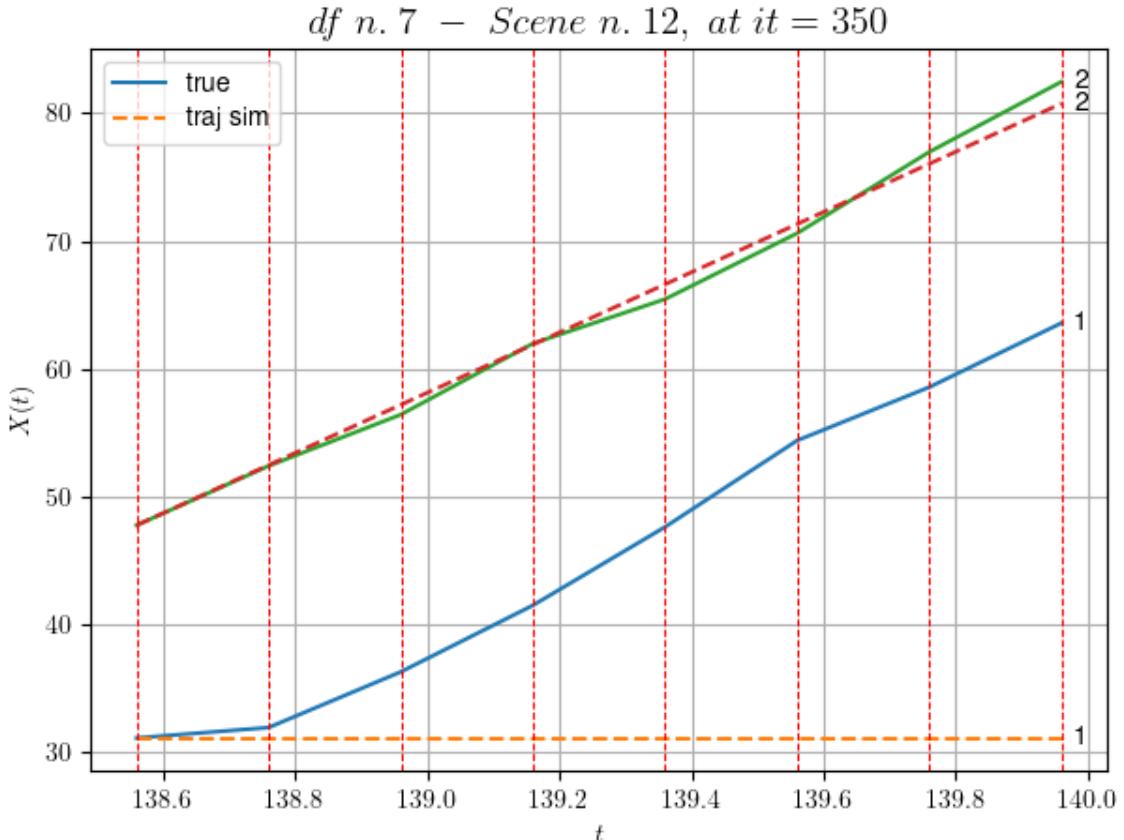
```
df n.7, scene n.12/30
```

---



---

```
We have 7 time intervals inside [138.56,139.96]
* err= 172.73024031441423
* Learning rate NN = 0.0001937102060765028
* diff = 2.4264502940241073e-07
```



For scene 12/30

```
* use LR_NN=0.0005 with err=15.002831838540663 at it=24
* v0_scn_mean = 23.940639035435936
* MAE = 71.82658439250709
```

---



---

```
df n.7, scene n.13/30
```

---



---

```
We have 3 time intervals inside [154.96,155.56]
```

- Time interval n.0: [154.96, 155.16]
  - \* y\_true: [9.47635991]
  - \* v\_ann: [-0.00021490723884198815, 24.5248786814825]

5]

---



---

- Time interval n.1: [155.16, 155.36]
  - \* y\_true: [11.49147565]
  - \* v\_ann: [-8.546358003513888e-06, 24.5248786814825]

5]

```

 - Time interval n.2: [155.36, 155.56]

 * y_true: [13.22499707]

 * v_ann: [-1.5682825278418022e-06, 24.5248786814825

5]

```

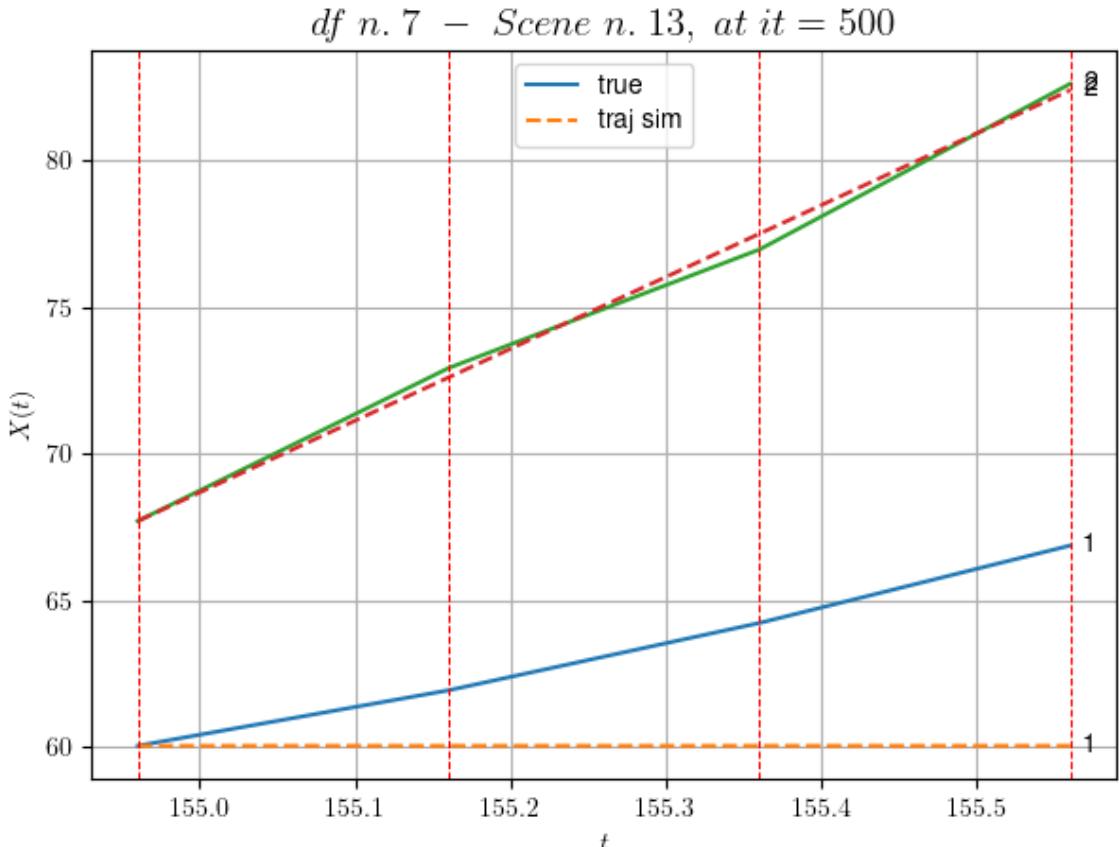
```

 * err= 8.548046783672328

 * Learning rate NN = 0.0005904899444431067

 * diff = 1.2605588199932072e-06

```



For scene 13/30

```

* use LR_NN=0.001 with err=2.192429952020629 at it=24
* v0_scn_mean = 24.743883534180874
* MAE = 8.548046783672328
=====
```

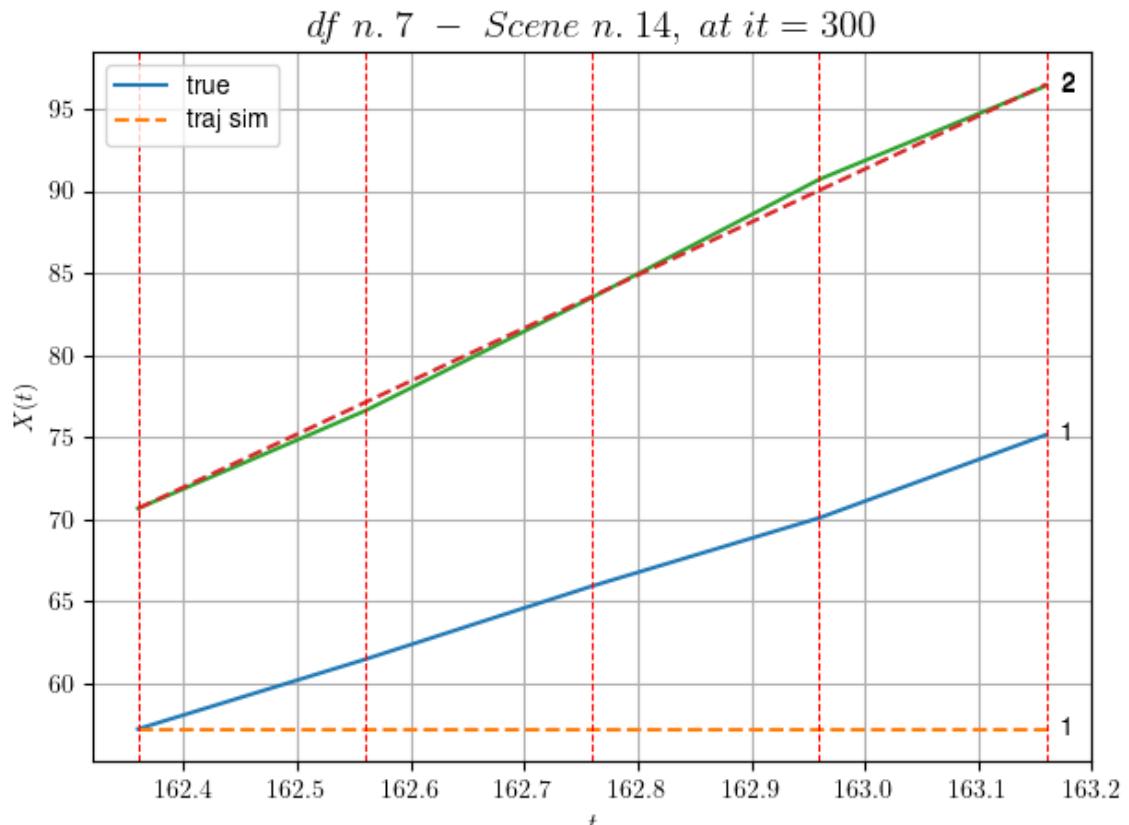
df n.7, scene n.14/30

```

=====
```

```

We have 4 time intervals inside [162.36,163.16]
* err= 58.231210397147414
* Learning rate NN = 0.0006560999318026006
* diff = 2.3189023323766378e-07
=====
```



For scene 14/30

```
* use LR_NN=0.001 with err=0.8925330814011975 at it=24
* v0_scn_mean = 32.168868543640805
* MAE = 58.231210397147414
```

---



---

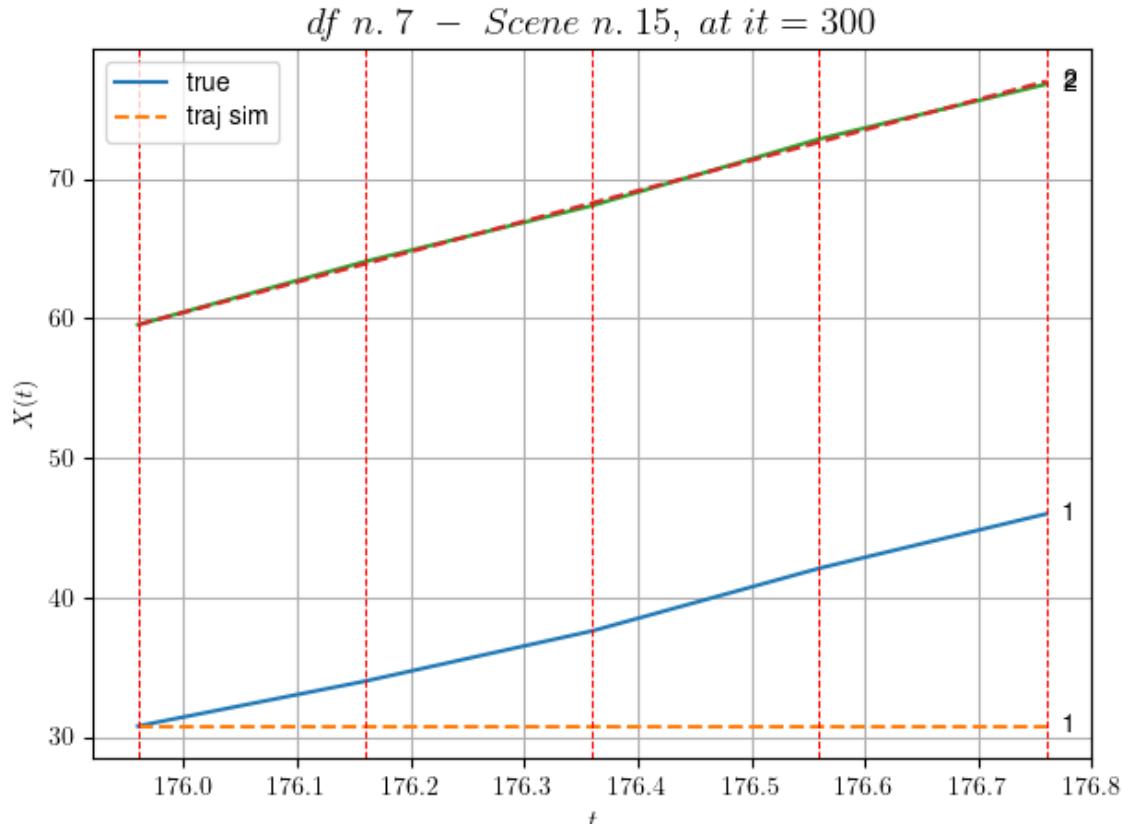
df n.7, scene n.15/30

---



---

```
We have 4 time intervals inside [175.96,176.76]
* err= 41.598210540865225
* Learning rate NN = 6.560998735949397e-05
* diff = 2.8769269277972853e-07
```



For scene 15/30

- \* use LR\_NN=0.0001 with err=8.237910665746426 at it=24
- \* v0\_scn\_mean = 22.36032045754697
- \* MAE = 41.598210540865225

---



---

df n.7, scene n.16/30

---



---

We have 4 time intervals inside [177.76, 178.56]

- Time interval n.0: [177.76, 177.96]
  - \* y\_true: [32.54285647]
  - \* v\_ann: [-2.871763354050927e-05, 20.68352620370681]

2]

---

- Time interval n.1: [177.96, 178.16]
  - \* y\_true: [23.85498335]
  - \* v\_ann: [-0.0005251235561445355, 20.68352620370681]

2]

---

- Time interval n.2: [178.16, 178.36]
  - \* y\_true: [24.01227025]
  - \* v\_ann: [-0.0005148928612470627, 20.68352620370681]

2]

---

```

- Time interval n.3: [178.36, 178.56]

* y_true: [39.91143127]

* v_ ann: [-0.0007401957991532981, 20.68352620370681

2]

```

```

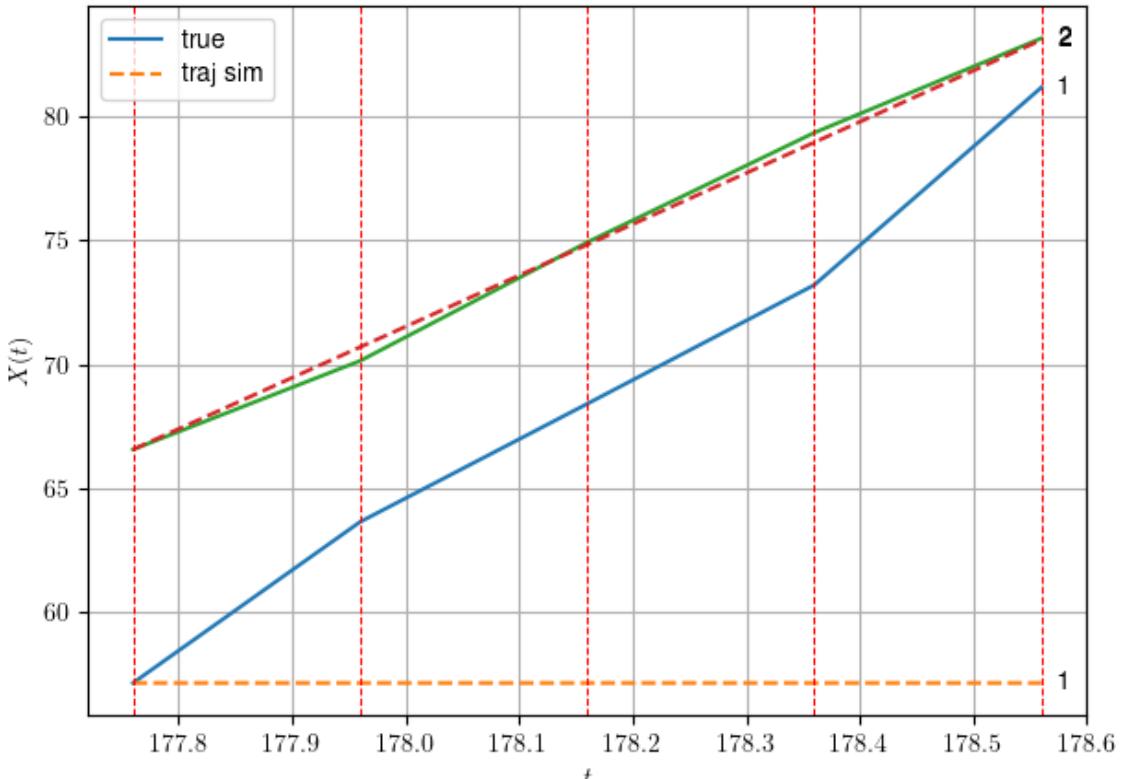
* err= 100.78145929030255

* Learning rate NN = 4.7829678806010634e-05

* diff = 2.62010471007055e-05

```

*df n. 7 – Scene n. 16, at it = 500*



For scene 16/30

```

* use LR_NN=0.0001 with err=11.099121795413893 at it=24
* v0_scn_mean = 21.056185155486947
* MAE = 100.77805910096622
=====
```

*df n.7, scene n.17/30*

```

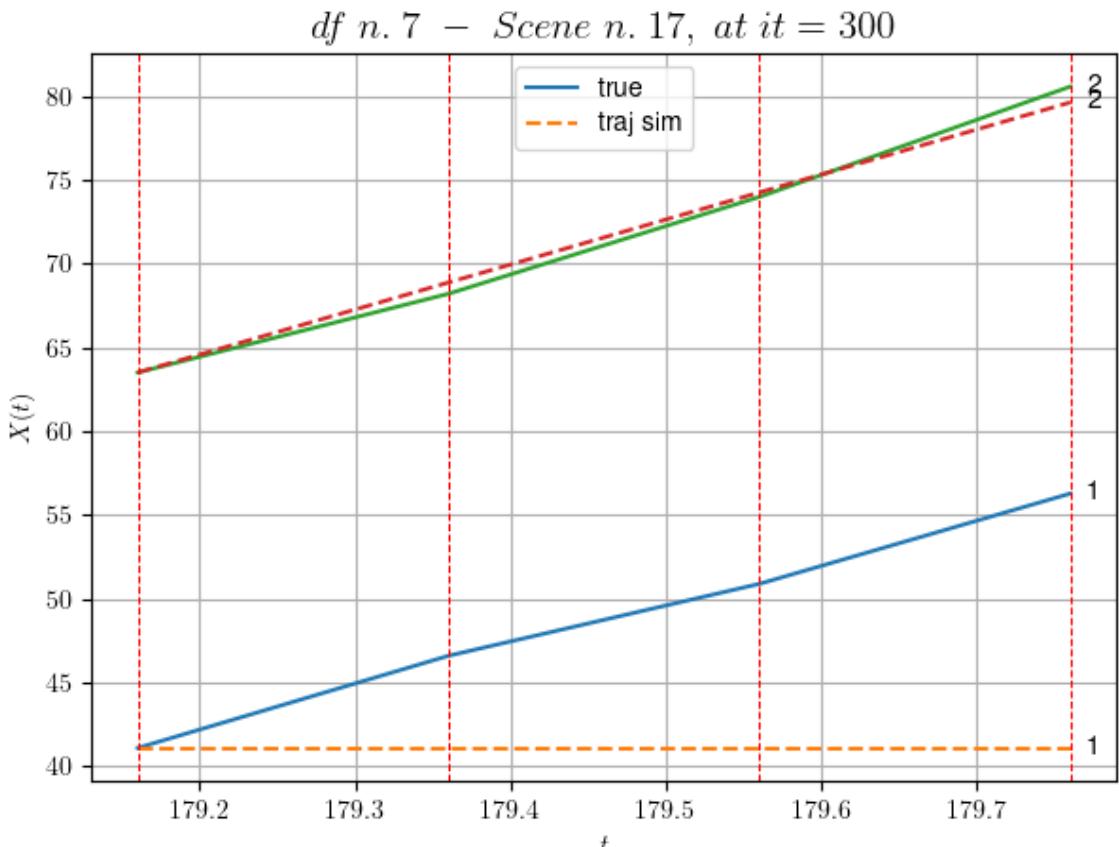
=====

We have 3 time intervals inside [179.16,179.76]

* err= 44.8063857098309

* Learning rate NN = 3.6449993785936385e-05

* diff = 6.246717347835329e-07
=====
```



For scene 17/30

- \* use LR\_NN=5e-05 with err=0.6349693589588925 at it=24
  - \* v0\_scn\_mean = 27.090214455479558
  - \* MAE = 44.78304862374045
- 
- 

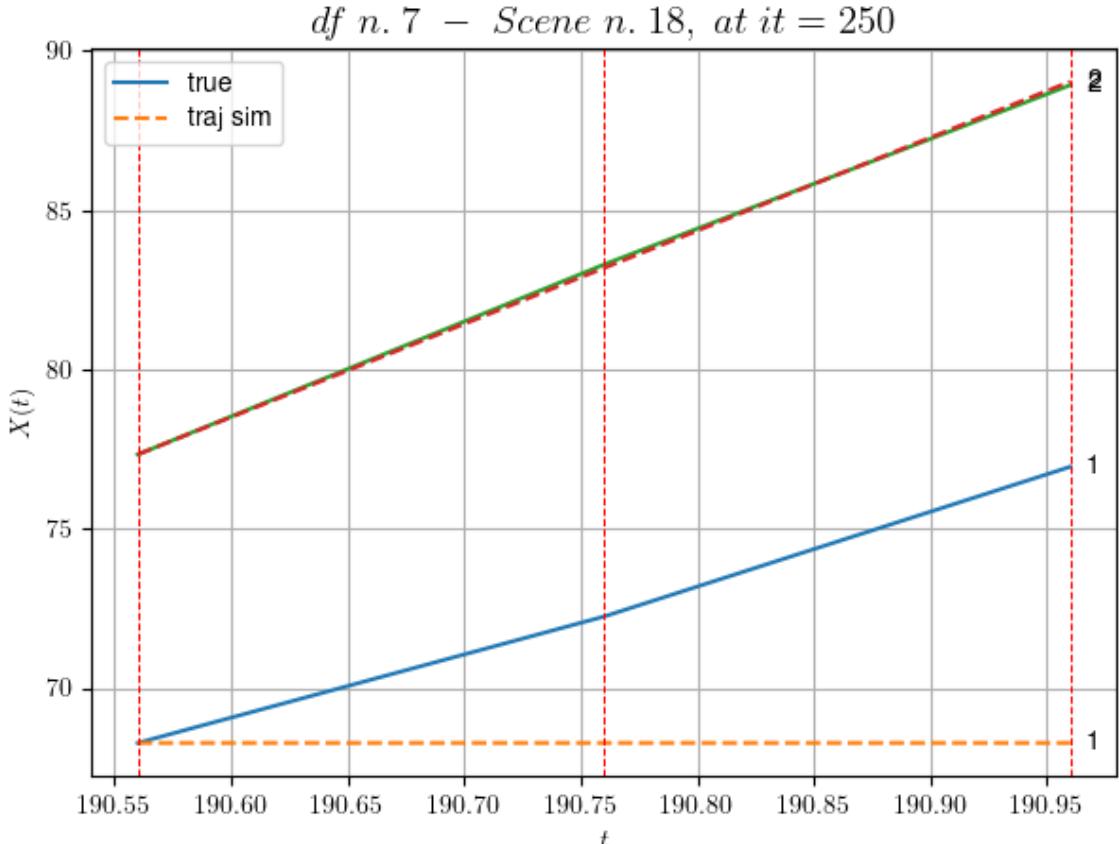
df n.7, scene n.18/30

---

---

We have 2 time intervals inside [190.56,190.96]

- \* err= 15.172889721158898
- \* Learning rate NN = 0.0004500000213738531
- \* diff = 3.185124946014639e-07



For scene 18/30

- \* use LR\_NN=0.0005 with err=0.027035560726915195 at it=24
- \* v0\_scn\_mean = 29.34093584942415
- \* MAE = 15.172889721158898

---



---

df n.7, scene n.19/30

---



---

We have 3 time intervals inside [206.96, 207.56]

- Time interval n.0: [206.96, 207.16]
  - \* y\_true: [27.98987794]
  - \* v\_ann: [29.88641357421875, 27.399256338800903]

---

- Time interval n.1: [207.16, 207.36]
  - \* y\_true: [27.47773295]
  - \* v\_ann: [28.389522552490234, 27.399256338800903]

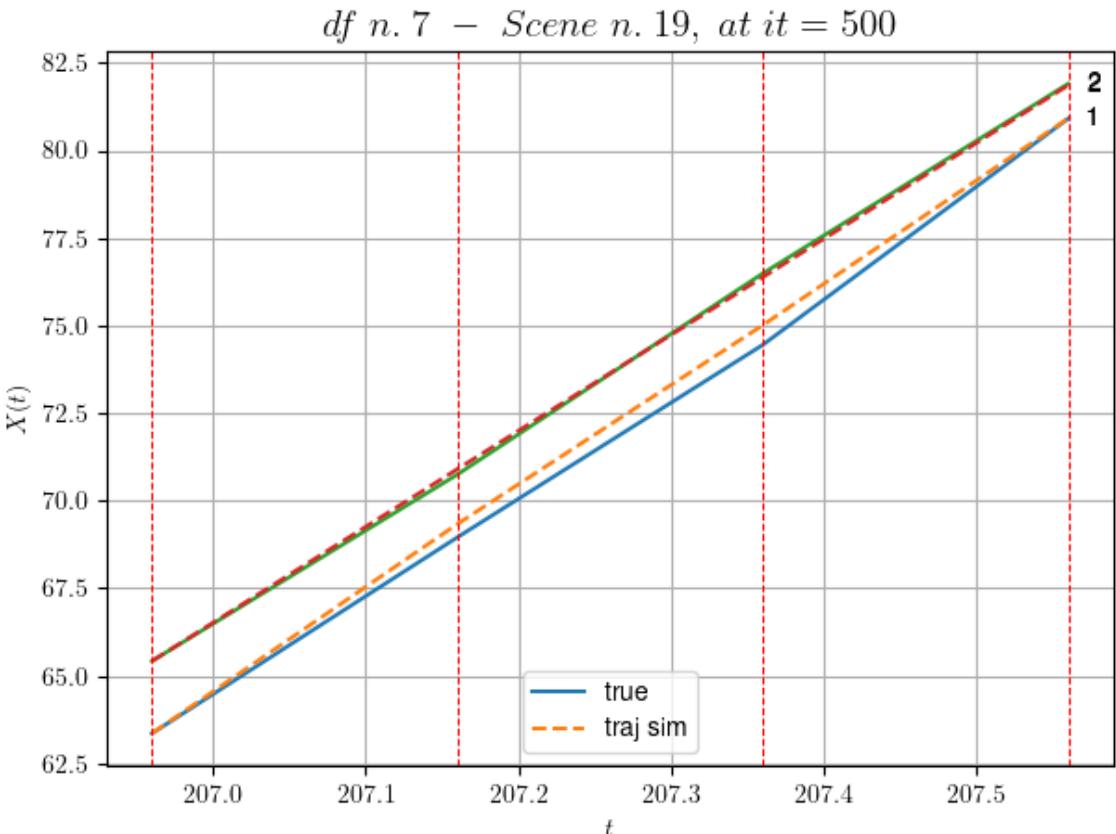
---

- Time interval n.2: [207.36, 207.56]
  - \* y\_true: [32.29931303]
  - \* v\_ann: [29.53665542602539, 27.399256338800903]

---

- \* err= 0.06208173551560131
- \* Learning rate NN = 0.0002952449722215533

\* diff = 2.1857168269440175e-05



For scene 19/30

\* use LR\_NN=0.0005 with err=0.49338475005067595 at it=24  
 \* v0\_scn\_mean = 27.5032860852289  
 \* MAE = 0.06184621901419119

---



---

df n.7, scene n.20/30

---



---

We have 7 time intervals inside [219.96, 221.36]

- Time interval n.0: [219.96, 220.16]  
 \* y\_true: [26.85290938]  
 \* v\_ann: [30.050722122192383, 31.227007582862264]

---

- Time interval n.1: [220.16, 220.36]  
 \* y\_true: [28.31792495]  
 \* v\_ann: [30.37856674194336, 31.227007582862264]

---

- Time interval n.2: [220.36, 220.56]  
 \* y\_true: [31.38990118]  
 \* v\_ann: [30.57332420349121, 31.227007582862264]

---

- Time interval n.3: [220.56, 220.76]

```
* y_true: [30.99769]
* v_ann: [30.923120498657227, 31.227007582862264]
```

---

```
- Time interval n.4: [220.76, 220.96]
* y_true: [35.50488652]
* v_ann: [30.781166076660156, 31.227007582862264]
```

---

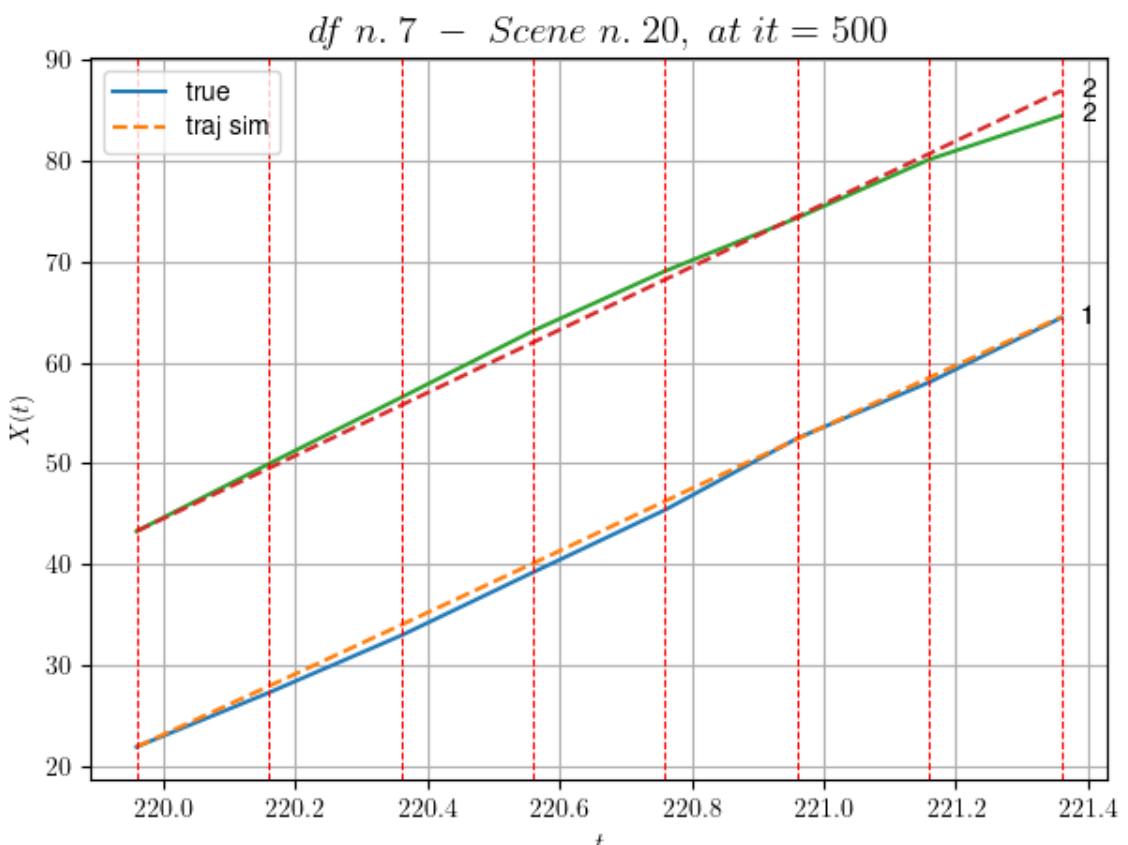
```
- Time interval n.5: [220.96, 221.16]
* y_true: [27.84910592]
* v_ann: [30.472339630126953, 31.227007582862264]
```

---

```
- Time interval n.6: [221.16, 221.36]
* y_true: [32.01250046]
* v_ann: [30.216285705566406, 31.227007582862264]
```

---

```
* err= 0.787250040628519
* Learning rate NN = 1.2709323527815286e-05
* diff = 0.0004033002867747104
```



For scene 20/30

```
* use LR_NN=5e-05 with err=0.9045969146069355 at it=24
* v0_scn_mean = 31.177927279557167
* MAE = 0.6645980893725716
```

```
df n.7, scene n.21/30
```

```
=====
=====
```

We have 7 time intervals inside [226.76,228.16]  
- Time interval n.0: [226.76, 226.96]  
  \* y\_true: [26.80615591]  
  \* v\_ann: [25.810672760009766, 30.69836132453327]

```


```

- Time interval n.1: [226.96, 227.16]  
  \* y\_true: [27.56613237]  
  \* v\_ann: [26.00263786315918, 30.69836132453327]

```


```

- Time interval n.2: [227.16, 227.36]  
  \* y\_true: [23.97470155]  
  \* v\_ann: [26.064048767089844, 30.69836132453327]

```


```

- Time interval n.3: [227.36, 227.56]  
  \* y\_true: [23.66579942]  
  \* v\_ann: [26.35559844970703, 30.69836132453327]

```


```

- Time interval n.4: [227.56, 227.76]  
  \* y\_true: [34.08364768]  
  \* v\_ann: [26.27375602722168, 30.69836132453327]

```


```

- Time interval n.5: [227.76, 227.96]  
  \* y\_true: [16.0589089]  
  \* v\_ann: [27.351638793945312, 30.69836132453327]

```

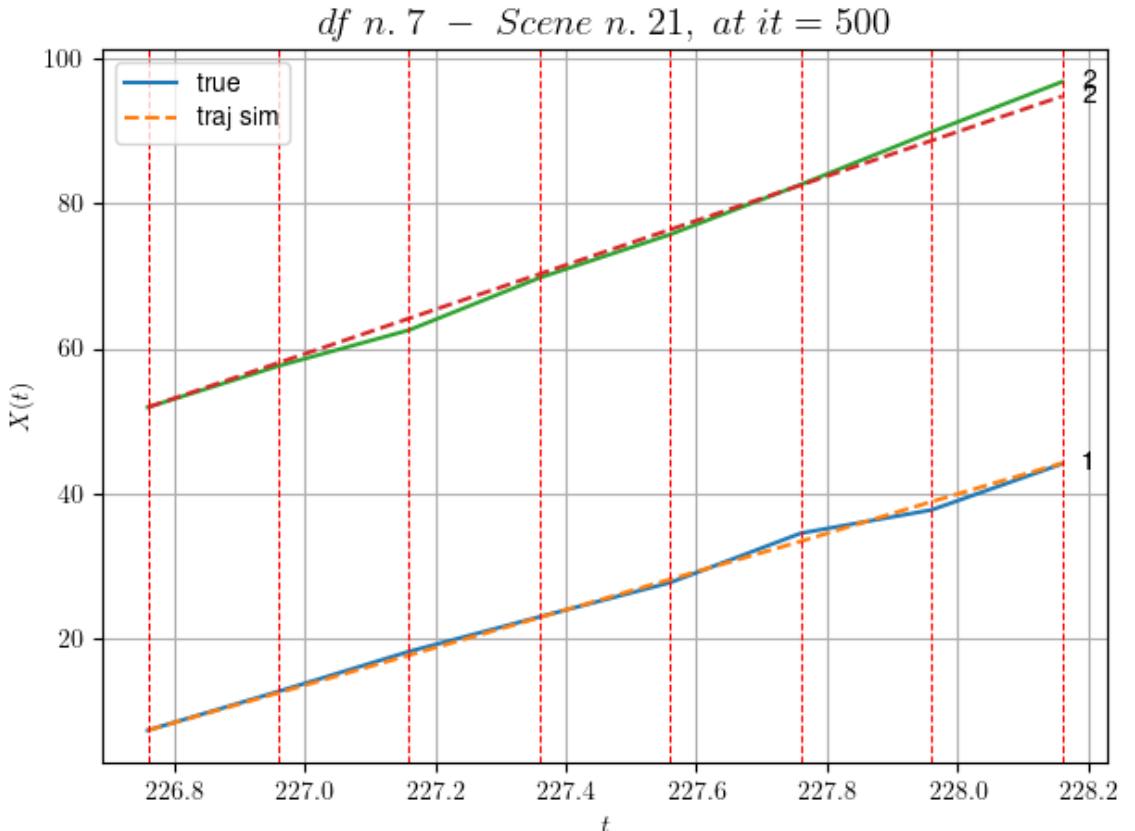

```

- Time interval n.6: [227.96, 228.16]  
  \* y\_true: [31.85553957]  
  \* v\_ann: [26.63157844543457, 30.69836132453327]

```

```

\* err= 0.7478194467680128  
\* Learning rate NN = 2.541864660088322e-06  
\* diff = 0 002869181630648751



For scene 21/30

- \* use LR\_NN=1e-05 with err=1.2473060031083028 at it=24
- \* v0\_scn\_mean = 30.67042687155753
- \* MAE = 0.7478194467680128

---



---

df n.7, scene n.22/30

---



---

We have 2 time intervals inside [38.56, 38.96]

- Time interval n.0: [38.56, 38.76]
  - \* y\_true: [34.50899027 34.29923068]
  - \* v\_ann: [29.952011108398438, 32.26597595214844, 2

8.99001059008479]

---

- Time interval n.1: [38.76, 38.96]

- \* y\_true: [33.76780394 27.40980382]

- \* v\_ann: [32.30900573730469, 34.89806365966797, 28.

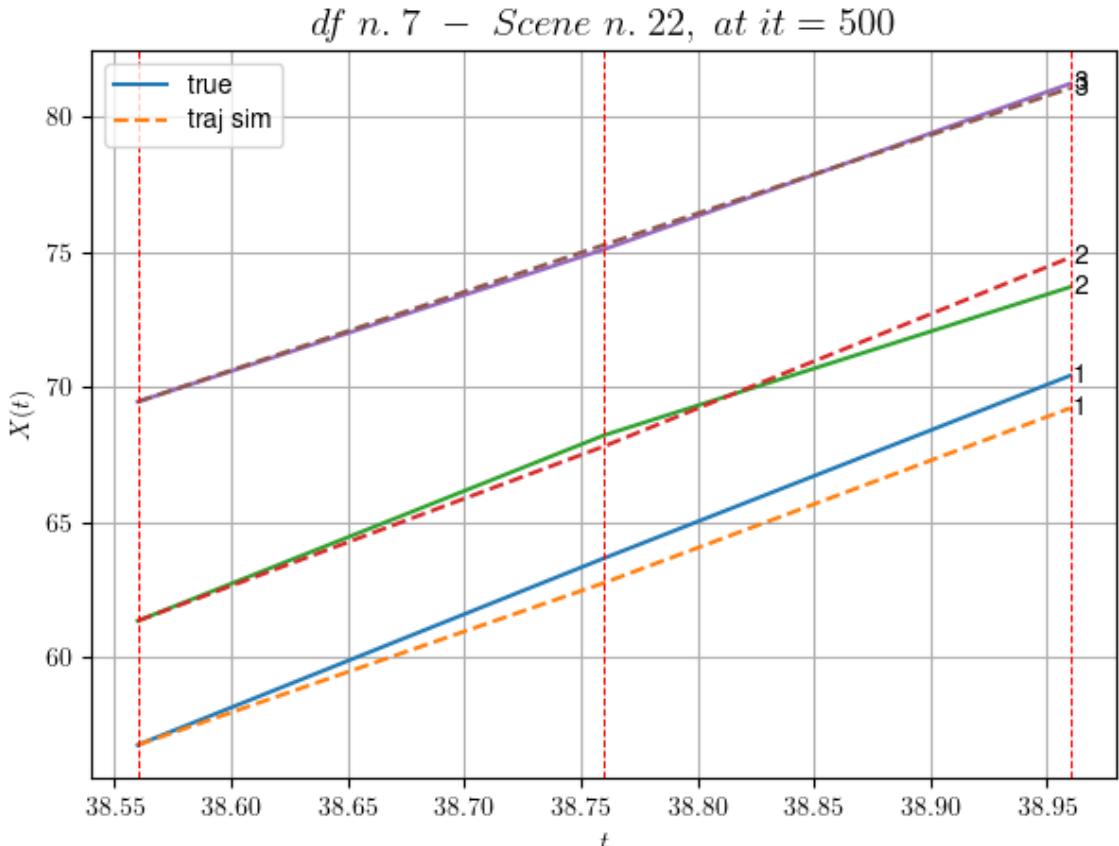
99001059008479]

---

- \* err= 0.40985089057991914

- \* Learning rate NN = 0.0007289999630302191

- \* diff = 0.012754064191917547



For scene 22/30

- \* use LR\_NN=0.001 with err=3.7499600096856036 at it=24
- \* v0\_scn\_mean = 29.050609909333406
- \* MAE = 0.40985089057991914

---



---

df n.7, scene n.23/30

---



---

We have 3 time intervals inside [39.76, 40.36]

- Time interval n.0: [39.76, 39.96]
  - \* y\_true: [22.5368218 26.50901133]
  - \* v\_ann: [27.219240188598633, 3.482807141644284e-1, 28.629752721377084]

---



---

- Time interval n.1: [39.96, 40.16]
  - \* y\_true: [27.13488394 22.34107329]
  - \* v\_ann: [24.151769638061523, 3.813493357901487e-1, 28.629752721377084]

---



---

- Time interval n.2: [40.16, 40.36]
  - \* y\_true: [29.97962766 28.56631616]
  - \* v\_ann: [27.177642822265625, 1.419394116131123e-1, 28.629752721377084]

---

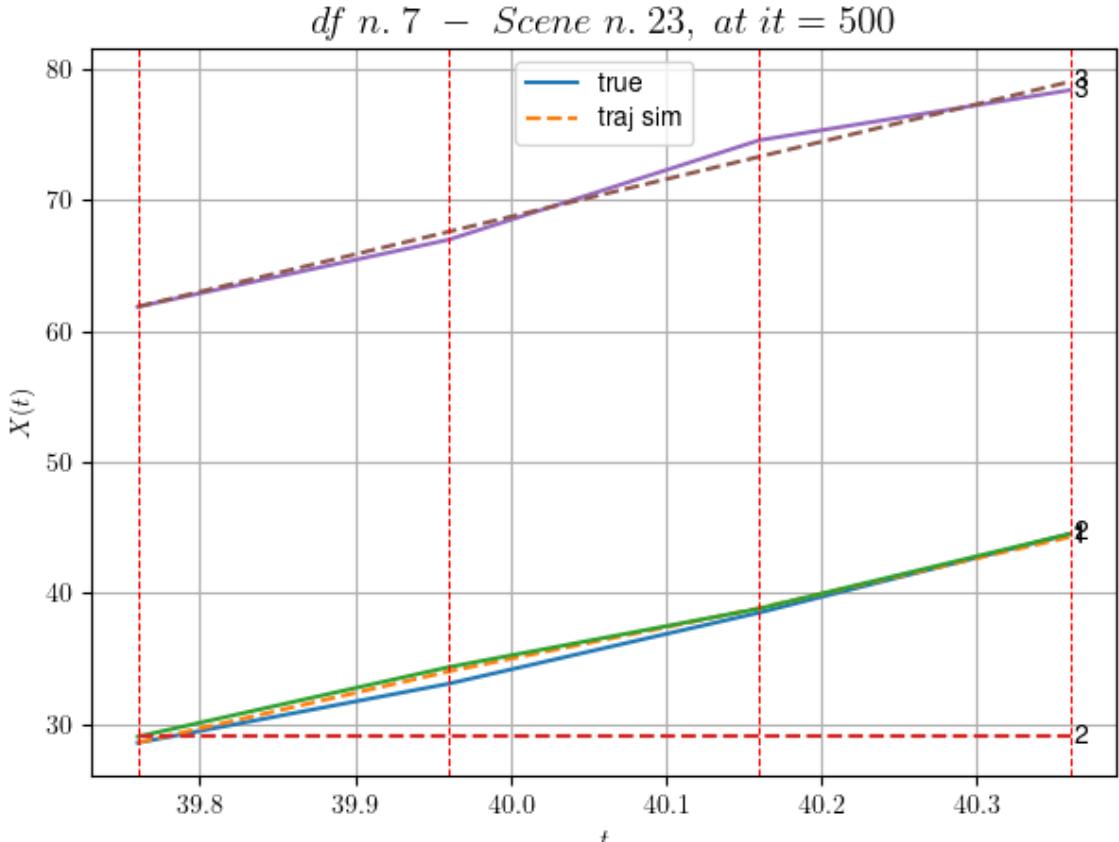


---

```

* err= 30.558893018557345
* Learning rate NN = 0.0005904899444431067
* diff = 0.0003570158393912948

```



For scene 23/30

```

* use LR_NN=0.001 with err=21.99531478828334 at it=24
* v0_scn_mean = 28.711967496573358
* MAE = 6.884370196459372

```

df n.7, scene n.24/30

We have 2 time intervals inside [45.96, 46.36]

- Time interval n.0: [45.96, 46.16]
  - \* y\_true: [25.63954073 32.24792255]
  - \* v\_ann: [1.304919169342611e-05, 0.00040333473589271307, 21.67936629607506]

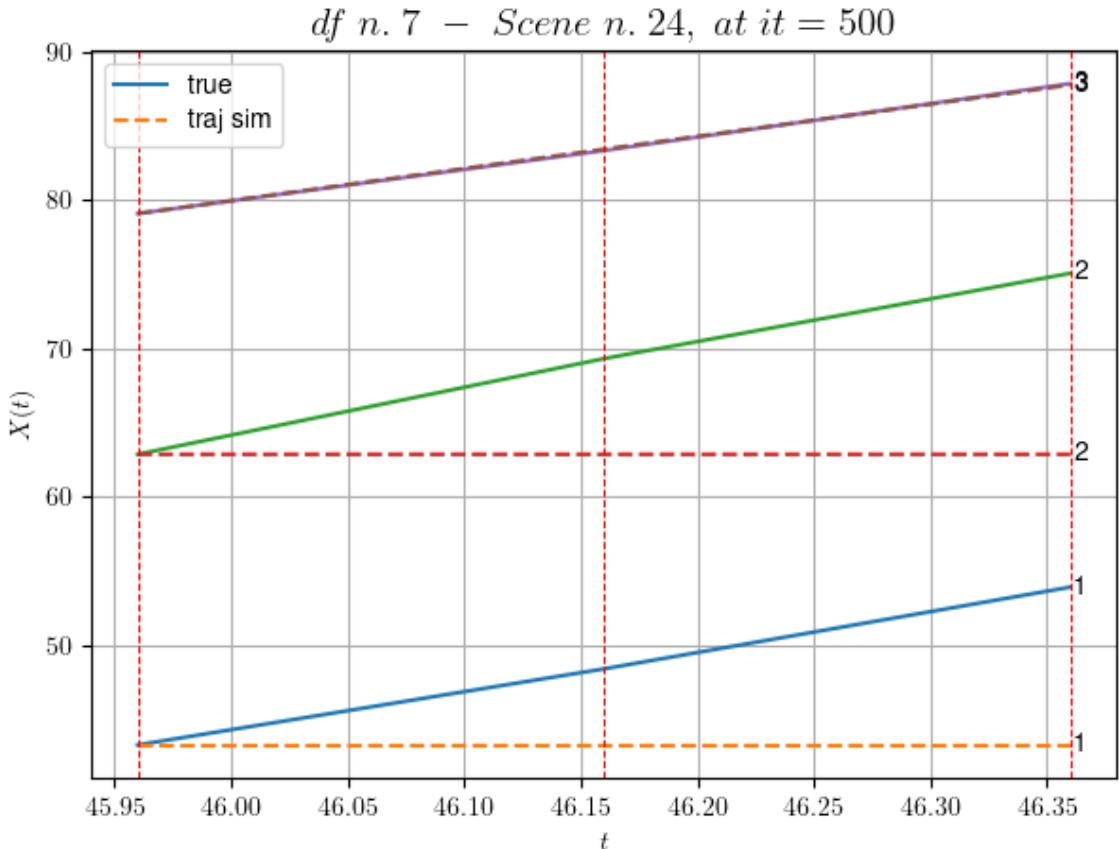
- Time interval n.1: [46.16, 46.36]
  - \* y\_true: [27.5623729 28.76269973]
  - \* v\_ann: [3.3877963687700685e-06, 0.0038300659507513046, 21.67936629607506]

```

* err= 36.6663676786356
* Learning rate NN = 7.289998757187277e-05

```

\* diff = 0.00019596769656970991



For scene 24/30

\* use LR\_NN=0.0001 with err=3.2146463764865643 at it=24  
\* v0\_scn\_mean = 22.17860394473205  
\* MAE = 36.6663676786356

---

---

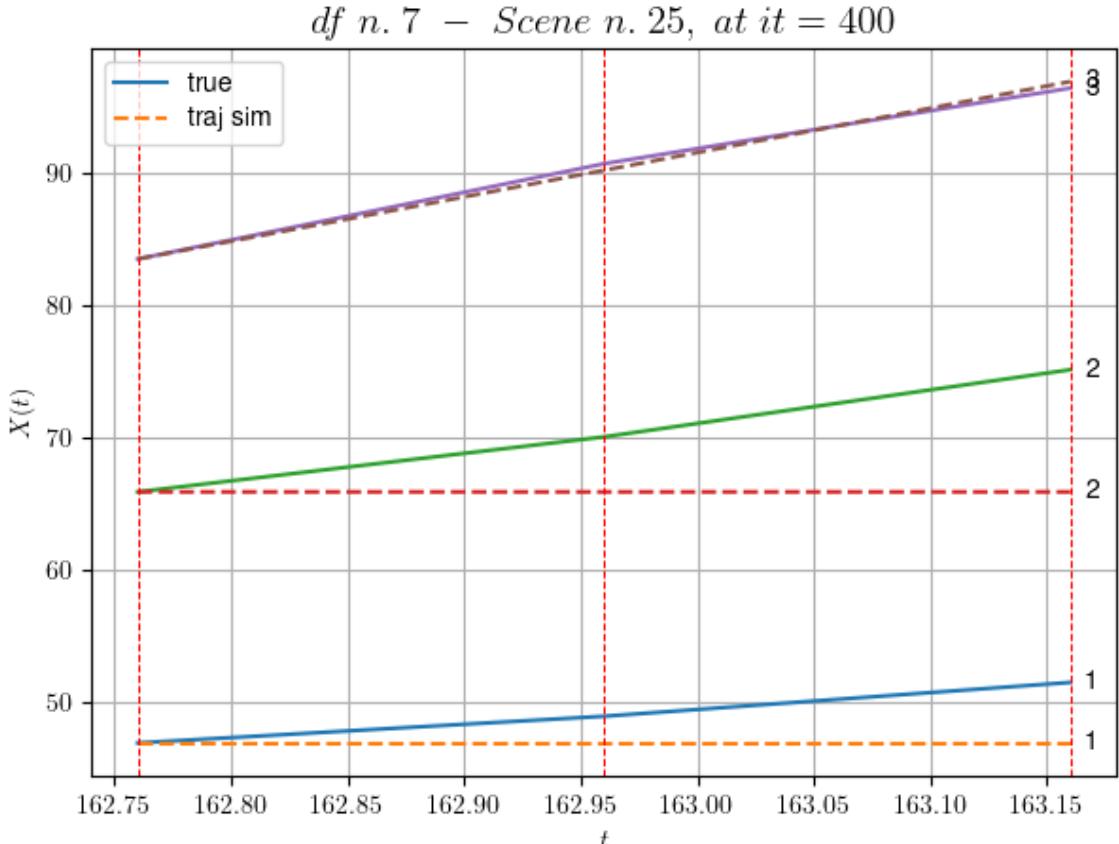
df n.7, scene n.25/30

---

---

We have 2 time intervals inside [162.76,163.16]

\* err= 14.211442302084683  
\* Learning rate NN = 7.289998757187277e-05  
\* diff = 2.5510398415917734e-07



For scene 25/30

- \* use LR\_NN=0.0001 with err=1.9363841883650188 at it=24
- \* v0\_scn\_mean = 33.25096350658612
- \* MAE = 14.205980532136502

---



---

df n.7, scene n.26/30

---



---

We have 3 time intervals inside [165.76, 166.36]

- Time interval n.0: [165.76, 165.96]
  - \* y\_true: [14.62535373 14.97522028]
  - \* v\_ann: [14.57197380065918, 14.177925109863281, 27.262209824915317]

---



---

- Time interval n.1: [165.96, 166.16]
  - \* y\_true: [14.90483904 10.97892299]
  - \* v\_ann: [14.871475219726562, 14.527377128601074, 27.262209824915317]

---



---

- Time interval n.2: [166.16, 166.36]
  - \* y\_true: [13.82116599 15.66867879]
  - \* v\_ann: [13.204192161560059, 13.341978073120117, 27.262209824915317]

---

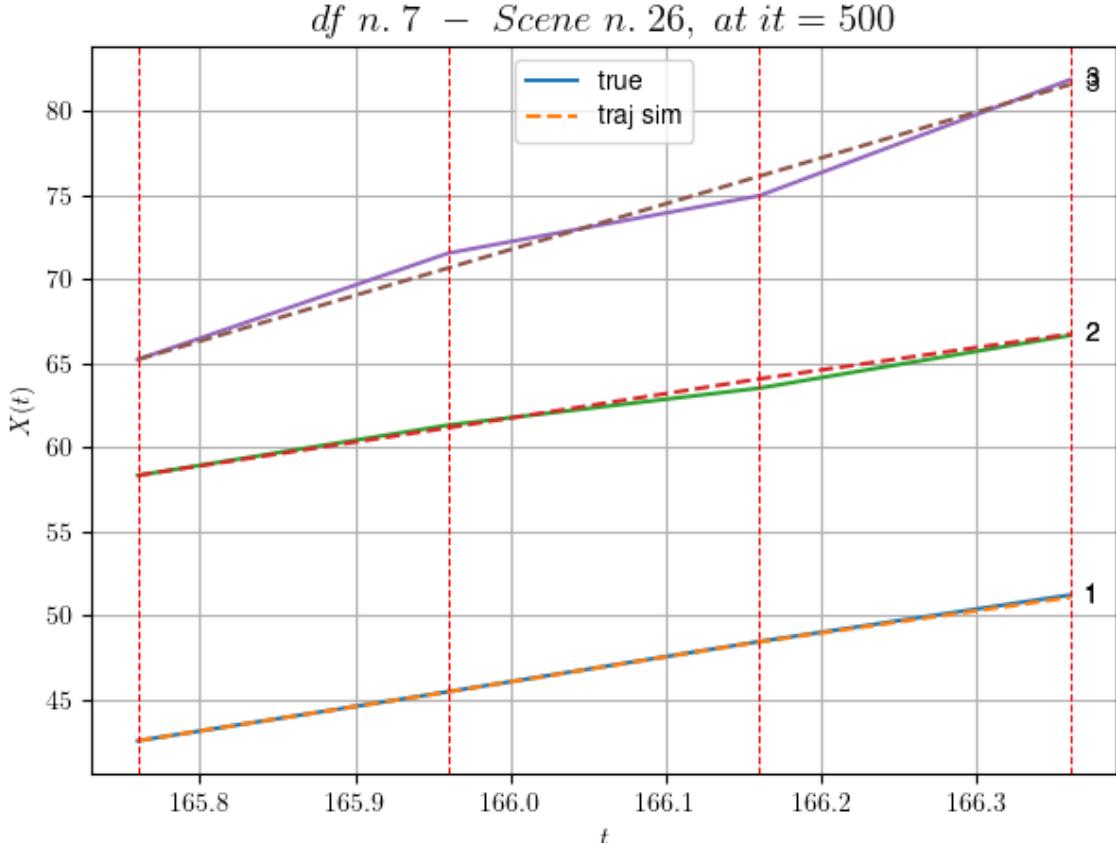


---

```

* err= 0.2132685955648864
* Learning rate NN = 0.0005904899444431067
* diff = 0.00013901523756271184

```



For scene 26/30

```

* use LR_NN=0.001 with err=1.3959722605017528 at it=24
* v0_scn_mean = 27.426477112500223
* MAE = 0.21300332364184457

```

df n.7, scene n.27/30

We have 3 time intervals inside [188.16,188.76]

- Time interval n.0: [188.16, 188.36]
  - \* y\_true: [18.26365072 21.2472937 ]
  - \* v\_ann: [19.46099853515625, 21.754592895507812, 2 4.8986082429418]

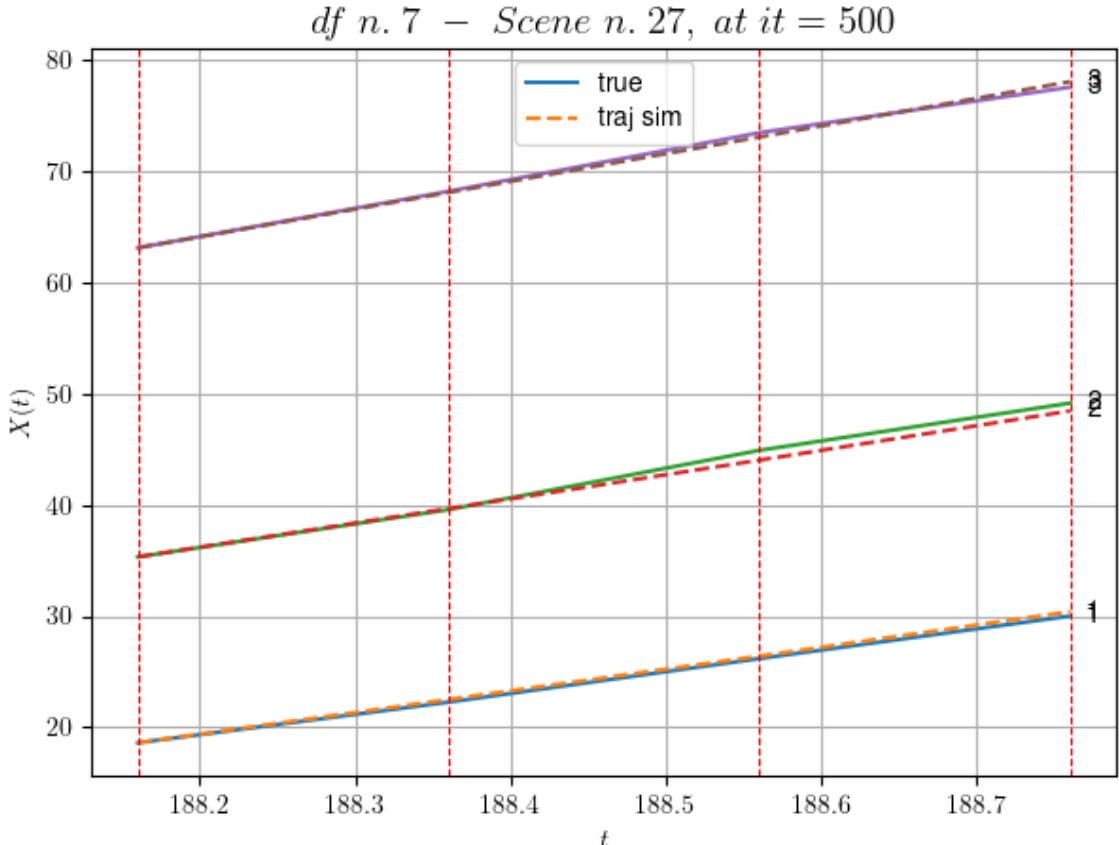
- Time interval n.1: [188.36, 188.56]
  - \* y\_true: [19.58083161 26.63811802]
  - \* v\_ann: [19.45903778076172, 21.722932815551758, 2 4.8986082429418]

- Time interval n.2: [188.56, 188.76]
  - \* y\_true: [19.1135942 21.22632097]

```
* v_ann: [20.0203857421875, 22.12983512878418, 24.8
986082429418]
```

```


* err= 0.16269561045105854
* Learning rate NN = 2.952449540316593e-05
* diff = 0.0049018702990442364
```



For scene 27/30

```
* use LR_NN=5e-05 with err=2.163209243546645 at it=24
* v0_scn_mean = 25.20469151932389
* MAE = 0.12461600006004166
```

```
=====
```

```
=====
```

*df n. 7, scene n. 28/30*

```
=====
```

```
=====
```

We have 2 time intervals inside [220.96, 221.36]

- Time interval n.0: [220.96, 221.16]
  - \* y\_true: [27.25777683 27.84910592]
  - \* v\_ann: [28.438011169433594, 32.21096420288086, 2

6.579845406052474]

---

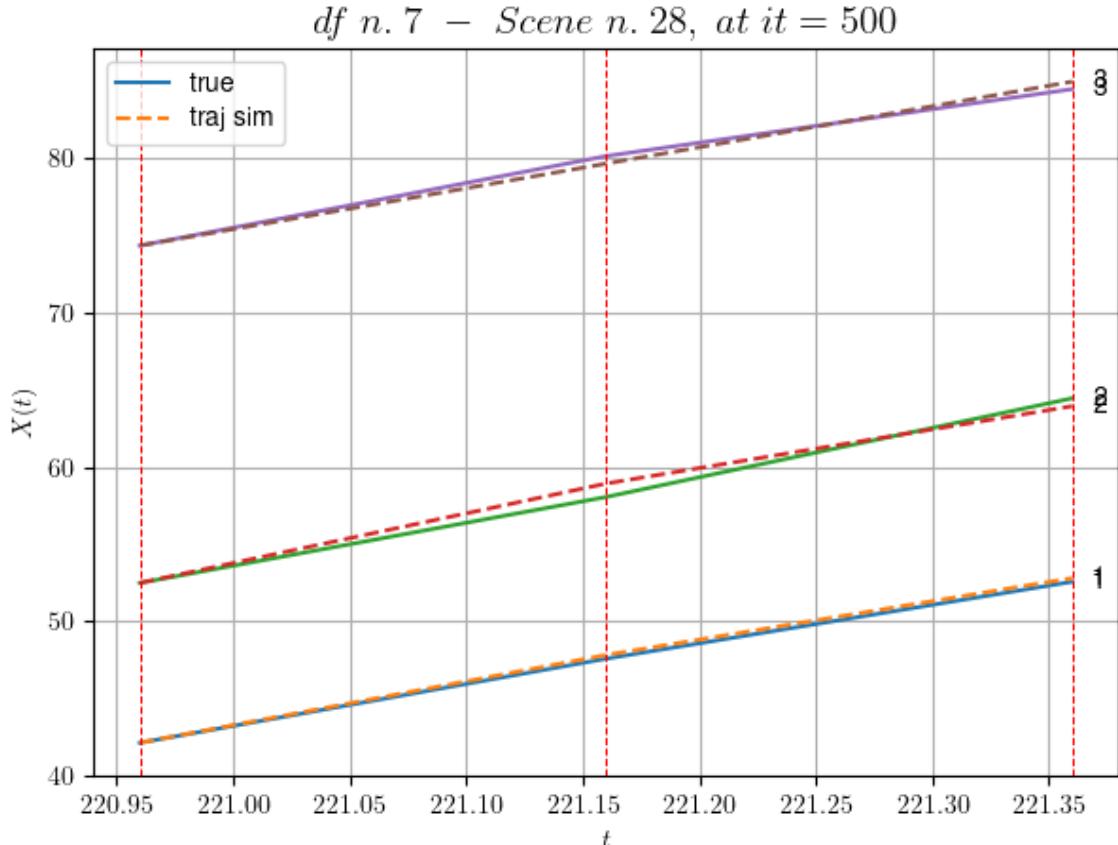


---

- Time interval n.1: [221.16, 221.36]
  - \* y\_true: [24.9447965 32.01250046]
  - \* v\_ann: [24.94845962524414, 25.091062545776367, 2

6.579845406052474]

```
* err= 0.1789095775834746
* Learning rate NN = 0.00036449998151510954
* diff = 0.0014949779060071666
```



For scene 28/30

```
* use LR_NN=0.0005 with err=2.980132735524632 at it=24
* v0_scn_mean = 26.78505452813198
* MAE = 0.11905178707486659
```

---



---

df n.7, scene n.29/30

---



---

We have 4 time intervals inside [166.56, 167.36]

- Time interval n.0: [166.56, 166.76]

- \* y\_true: [17.24164345 15.73752306 15.58083022]

- \* v\_ann: [17.855159759521484, 17.76903533935547, 1

7.806543350219727, 17.368635969066148]

---



---

- Time interval n.1: [166.76, 166.96]

- \* y\_true: [18.38470966 27.72552812 9.3330177 ]

- \* v\_ann: [15.668789863586426, 17.019058227539062, 1

6.35489845275879, 17.368635969066148]

---



---

- Time interval n.2: [166.96, 167.16]

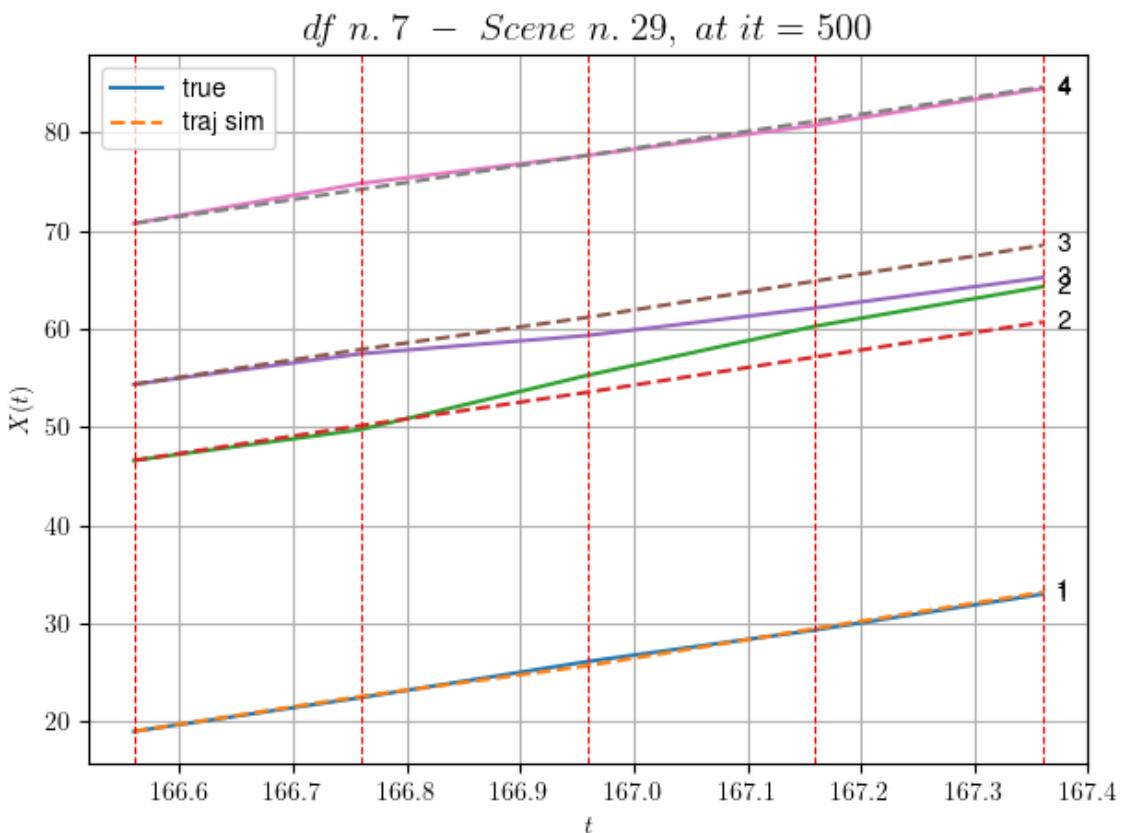
```

* y_true: [16.02323775 24.97208403 13.98221987]
* v_ann: [18.89020538330078, 17.92671775817871, 18.
47579002380371, 17.368635969066148]

- Time interval n.3: [167.16, 167.36]
* y_true: [18.26534189 20.06151439 15.46259314]
* v_ann: [18.467884063720703, 17.78314208984375, 1
8.18589973449707, 17.368635969066148]

* err= 2.4426169539366187
* Learning rate NN = 0.000478296831715852
* diff = 0.004029399263369093

```



For scene 29/30

```

* use LR_NN=0.001 with err=27.753626510889983 at it=24
* v0_scn_mean = 18.37910398741257
* MAE = 2.4426169539366187

```

---



---



---



---



---

For df=7 with 30 scenes, time taken: 456.61

---



---



---



---



---

In df n.8/10 we have 79 scenes

df n.8, scene n.0/79

---



---

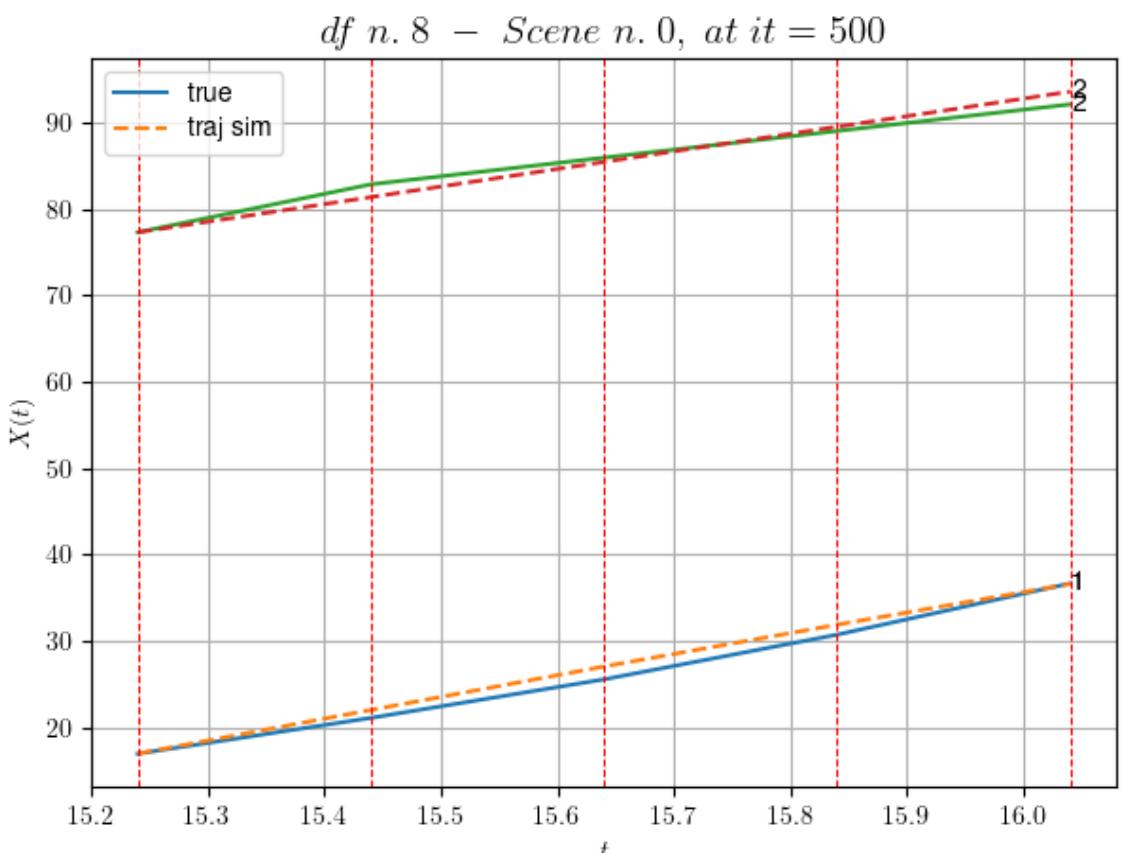
```
=====
We have 4 time intervals inside [15.24,16.04]
- Time interval n.0: [15.24, 15.44]
 * y_true: [20.72015193]
 * v_ann: [25.302230834960938, 20.372280298408462]

- Time interval n.1: [15.44, 15.64]
 * y_true: [22.3102442]
 * v_ann: [25.182044982910156, 20.372280298408462]

- Time interval n.2: [15.64, 15.84]
 * y_true: [25.89041527]
 * v_ann: [24.18773651123047, 20.372280298408462]

- Time interval n.3: [15.84, 16.04]
 * y_true: [29.71065198]
 * v_ann: [23.59339141845703, 20.372280298408462]

* err= 0.9256453487228316
* Learning rate NN = 2.3914839403005317e-05
* diff = 0.00021682806613465555
```



For scene 0/79

- \* use LR\_NN=5e-05 with err=14.088766988462845 at it=24
- \* v0\_scn\_mean = 20.757389086398558
- \* MAE = 0.9214665142114082

```
=====
=====
```

df n.8, scene n.1/79

```
=====
=====
```

We have 4 time intervals inside [28.44,29.24]

- Time interval n.0: [28.44, 28.64]
  - \* y\_true: [8.71284384]
  - \* v\_ann: [7.241101264953613, 19.374312728051596]

```

```

- Time interval n.1: [28.64, 28.84]
  - \* y\_true: [8.50235658]
  - \* v\_ann: [7.439080238342285, 19.374312728051596]

```

```

- Time interval n.2: [28.84, 29.04]
  - \* y\_true: [7.66040755]
  - \* v\_ann: [7.924108505249023, 19.374312728051596]

```

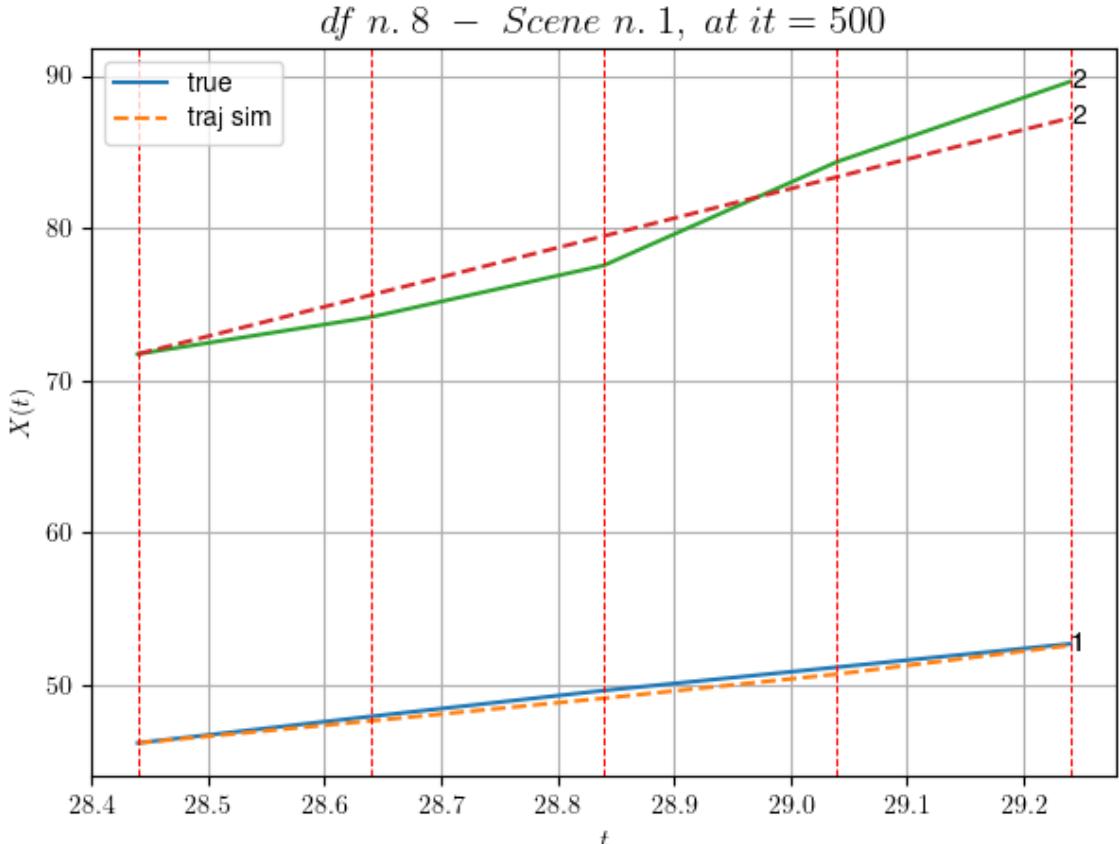
```

- Time interval n.3: [29.04, 29.24]
  - \* y\_true: [7.66040755]
  - \* v\_ann: [9.415104866027832, 19.374312728051596]

```

```

- \* err= 1.3073387751077883
- \* Learning rate NN = 4.782968062500004e-06
- \* diff = 4.347915929958646e-06



For scene 1/79

- \* use LR\_NN=1e-05 with err=11.758063822381688 at it=24
- \* v0\_scn\_mean = 19.799340218848332
- \* MAE = 1.1039706949679582

---



---

df n.8, scene n.2/79

---



---

We have 4 time intervals inside [48.04, 48.84]

- Time interval n.0: [48.04, 48.24]
  - \* y\_true: [1.45008394]
  - \* v\_ann: [1.35943949225647, 19.366199251197184]

---

- Time interval n.1: [48.24, 48.44]
  - \* y\_true: [1.45008394]
  - \* v\_ann: [1.4680540561676025, 19.366199251197184]

---

- Time interval n.2: [48.44, 48.64]
  - \* y\_true: [1.45008394]
  - \* v\_ann: [1.4816811084747314, 19.366199251197184]

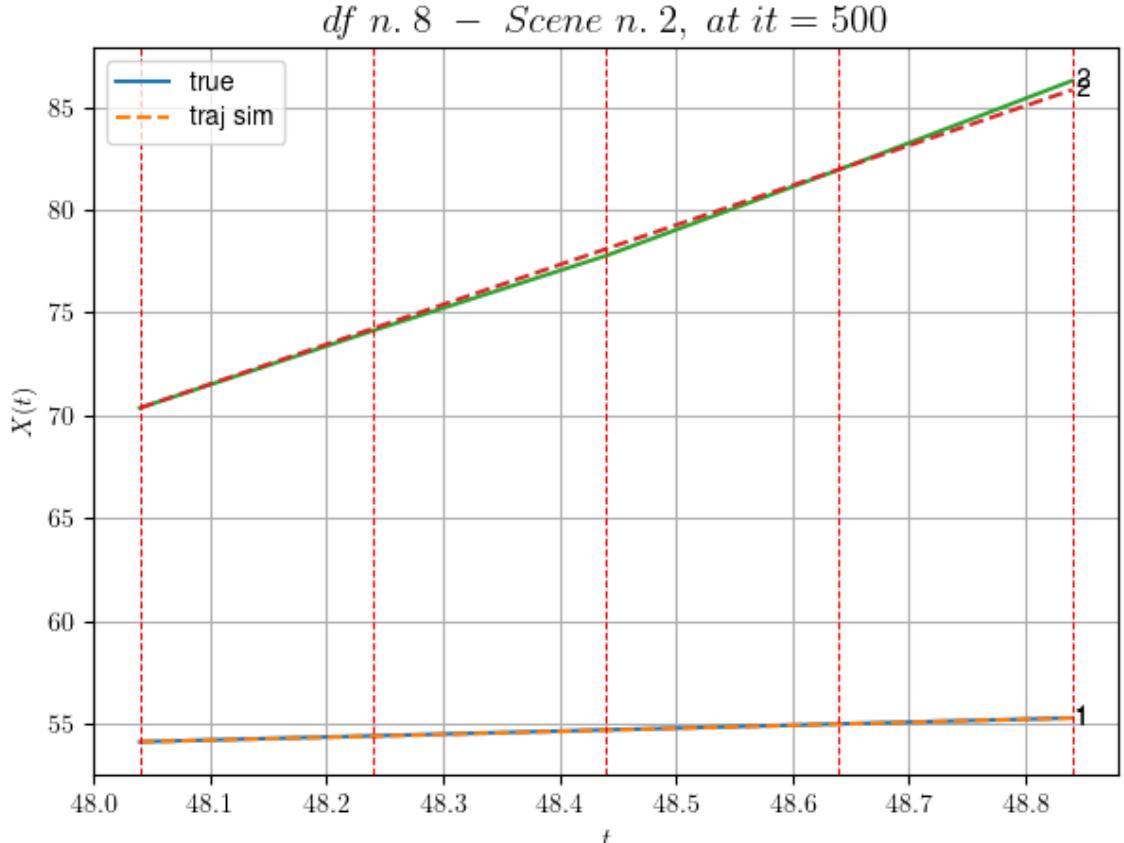
---

- Time interval n.3: [48.64, 48.84]
  - \* y\_true: [1.45008394]

```
* v_ann: [1.4626585245132446, 19.366199251197184]
```

---

```
* err= 0.03223678191772321
* Learning rate NN = 0.004782968200743198
* diff = 2.6035548785427465e-05
```



For scene 2/79

```
* use LR_NN=0.01 with err=13.179383664773033 at it=24
* v0_scn_mean = 19.791551281068124
* MAE = 0.030261639094655193
```

---



---

df n.8, scene n.3/79

---



---



---



---

We have 7 time intervals inside [58.44, 59.84]

- Time interval n.0: [58.44, 58.64]
  - \* y\_true: [0.49091559]
  - \* v\_ann: [19.10582733154297, 27.356016886559182]

---



---

- Time interval n.1: [58.64, 58.84]
  - \* y\_true: [17.39372277]
  - \* v\_ann: [19.51433563232422, 27.356016886559182]

---



---

- Time interval n.2: [58.84, 59.04]

```
* y_true: [26.31054645]
* v_ann: [20.978055953979492, 27.356016886559182]
```

- Time interval n.3: [59.04, 59.24]

```
* y_true: [18.56048997]
```

```
* v_ann: [22.74811363220215, 27.356016886559182]
```

- Time interval n.4: [59.24, 59.44]

```
* y_true: [29.87104502]
```

```
* v_ann: [22.216045379638672, 27.356016886559182]
```

- Time interval n.5: [59.44, 59.64]

```
* y_true: [27.43120096]
```

```
* v_ann: [24.827987670898438, 27.356016886559182]
```

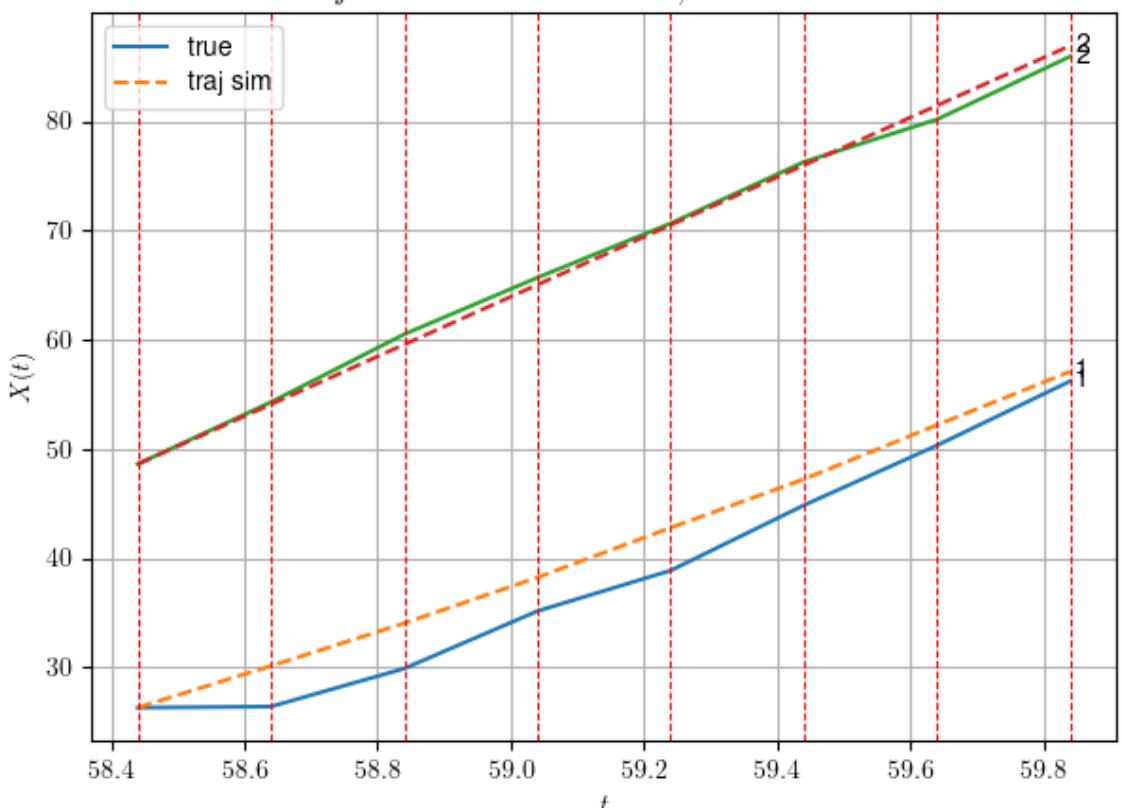
- Time interval n.6: [59.64, 59.84]

```
* y_true: [29.40163264]
```

```
* v_ann: [24.466386795043945, 27.356016886559182]
```

```
* err= 4.369021689077715
* Learning rate NN = 0.00012709324073512107
* diff = 0.08497872597697587
```

*df n. 8 – Scene n. 3, at it = 500*



For scene 3/79

```
* use LR_NN=0.0005 with err=5.5871764157196715 at it=24
* v0_scn_mean = 27.46177621107652
* MAE = 2.3786789906353154
```

---



---

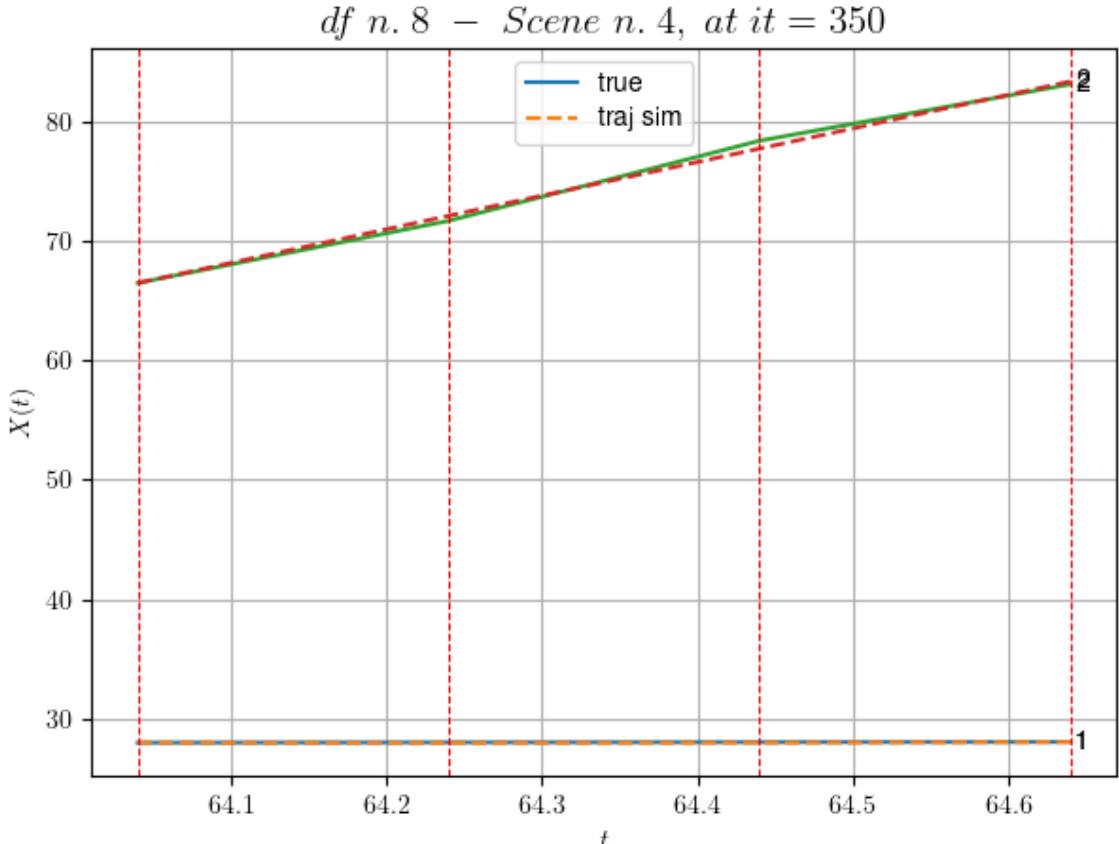
df n.8, scene n.4/79

---



---

```
We have 3 time intervals inside [64.04,64.64]
* err= 0.0837861599434634
* Learning rate NN = 6.560998826898867e-06
* diff = 5.763891374743757e-07
```



For scene 4/79

```
* use LR_NN=1e-05 with err=0.3160348511186604 at it=24
* v0_scn_mean = 28.21919004988
* MAE = 0.08357563877241679
```

---



---

df n.8, scene n.5/79

---



---

```
We have 6 time intervals inside [89.24,90.44]
- Time interval n.0: [89.24, 89.44]
* y_true: [18.05066392]
* v_ann: [34.02817153930664, 10.658512788374585]
```

---



---

```

 - Time interval n.1: [89.44, 89.64]
 * y_true: [35.35163844]
 * v_ann: [31.024066925048828, 10.658512788374585]

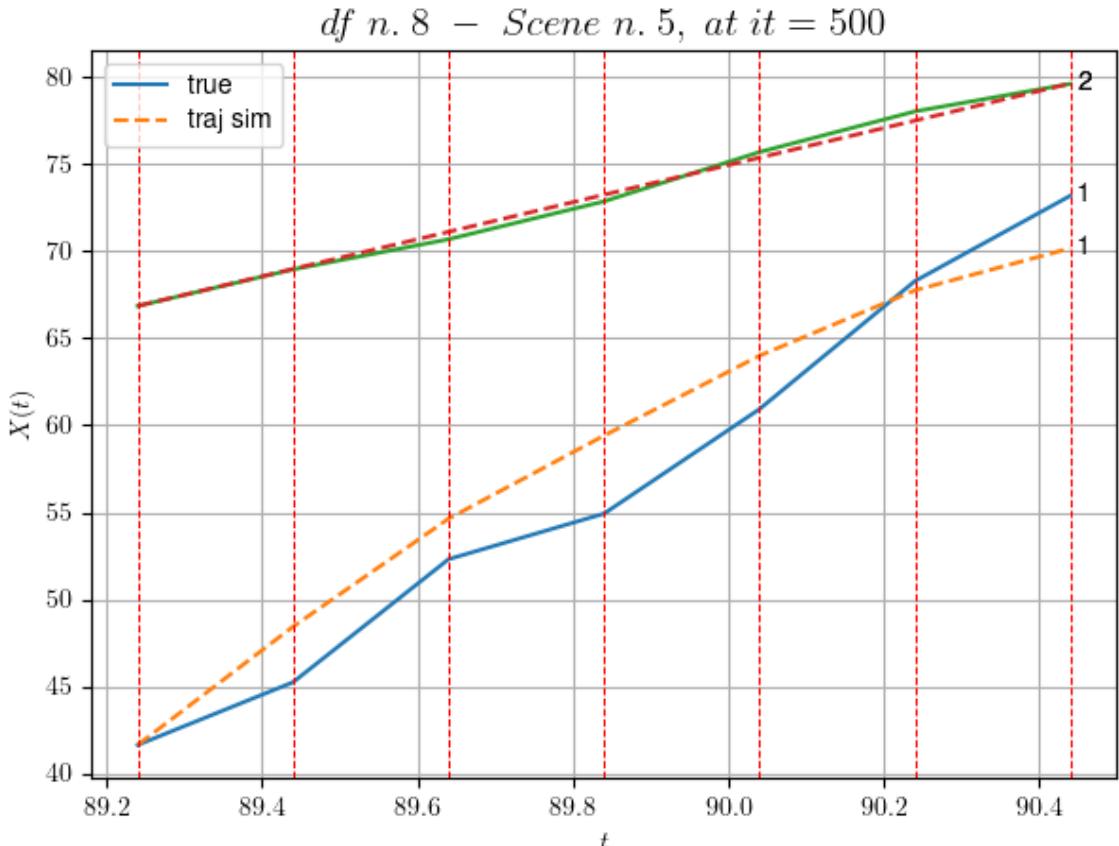
 - Time interval n.2: [89.64, 89.84]
 * y_true: [13.10073144]
 * v_ann: [23.886247634887695, 10.658512788374585]

 - Time interval n.3: [89.84, 90.04]
 * y_true: [30.05195835]
 * v_ann: [22.955196380615234, 10.658512788374585]

 - Time interval n.4: [90.04, 90.24]
 * y_true: [36.80298132]
 * v_ann: [18.80157470703125, 10.658512788374585]

 - Time interval n.5: [90.24, 90.44]
 * y_true: [24.55237984]
 * v_ann: [12.121638298034668, 10.658512788374585]

* err= 3.94952468930332
* Learning rate NN = 1.5690524378442205e-05
* diff = 0.014467355284913719
```



For scene 5/79

- \* use LR\_NN=5e-05 with err=100.02894206270207 at it=24
- \* v0\_scn\_mean = 11.432172276691851
- \* MAE = 3.9364077649927465

---



---

df n.8, scene n.6/79

---



---

We have 10 time intervals inside [101.04, 103.04]

- Time interval n.0: [101.04, 101.24]
  - \* y\_true: [18.44035973]
  - \* v\_ann: [20.609607696533203, 26.48969548240825]

---

- Time interval n.1: [101.24, 101.44]
  - \* y\_true: [17.96043382]
  - \* v\_ann: [19.283523559570312, 26.48969548240825]

---

- Time interval n.2: [101.44, 101.64]
  - \* y\_true: [17.55051624]
  - \* v\_ann: [19.12775230407715, 26.48969548240825]

---

- Time interval n.3: [101.64, 101.84]
  - \* y\_true: [19.81069648]

\* v\_ann: [17.779983520507812, 26.48969548240825]

- Time interval n.4: [101.84, 102.04]  
\* y\_true: [21.1609002]  
\* v\_ann: [17.181774139404297, 26.48969548240825]

- Time interval n.5: [102.04, 102.24]  
\* y\_true: [24.00120533]  
\* v\_ann: [19.18924331665039, 26.48969548240825]

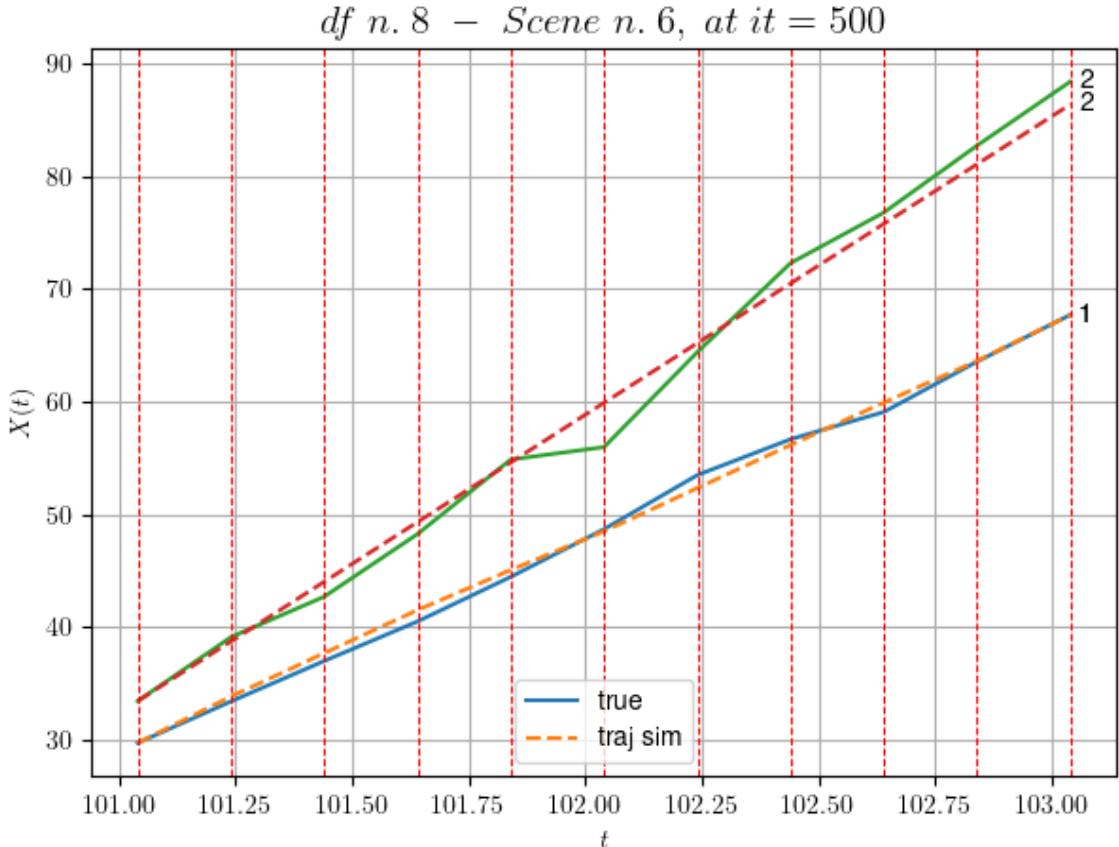
- Time interval n.6: [102.24, 102.44]  
\* y\_true: [15.94092959]  
\* v\_ann: [19.13568687438965, 26.48969548240825]

- Time interval n.7: [102.44, 102.64]  
\* y\_true: [12.10080168]  
\* v\_ann: [18.813215255737305, 26.48969548240825]

- Time interval n.8: [102.64, 102.84]  
\* y\_true: [22.37162153]  
\* v\_ann: [18.58314323425293, 26.48969548240825]

- Time interval n.9: [102.84, 103.04]  
\* y\_true: [20.76175162]  
\* v\_ann: [20.33995246887207, 26.48969548240825]

\* err= 1.5812274795263768  
\* Learning rate NN = 0.00013508510892279446  
\* diff = 0.004739926023582086



For scene 6/79

- \* use LR\_NN=0.001 with err=24.57678441552373 at it=24
- \* v0\_scn\_mean = 26.63010766308479
- \* MAE = 1.5812274795263768

---



---

df n.8, scene n.7/79

---



---

We have 3 time intervals inside [105.04, 105.64]

- Time interval n.0: [105.04, 105.24]
  - \* y\_true: [21.1009302]
  - \* v\_ann: [29.644624710083008, 27.688024621823832]

---

- Time interval n.1: [105.24, 105.44]
  - \* y\_true: [30.82171709]
  - \* v\_ann: [31.263229370117188, 27.688024621823832]

---

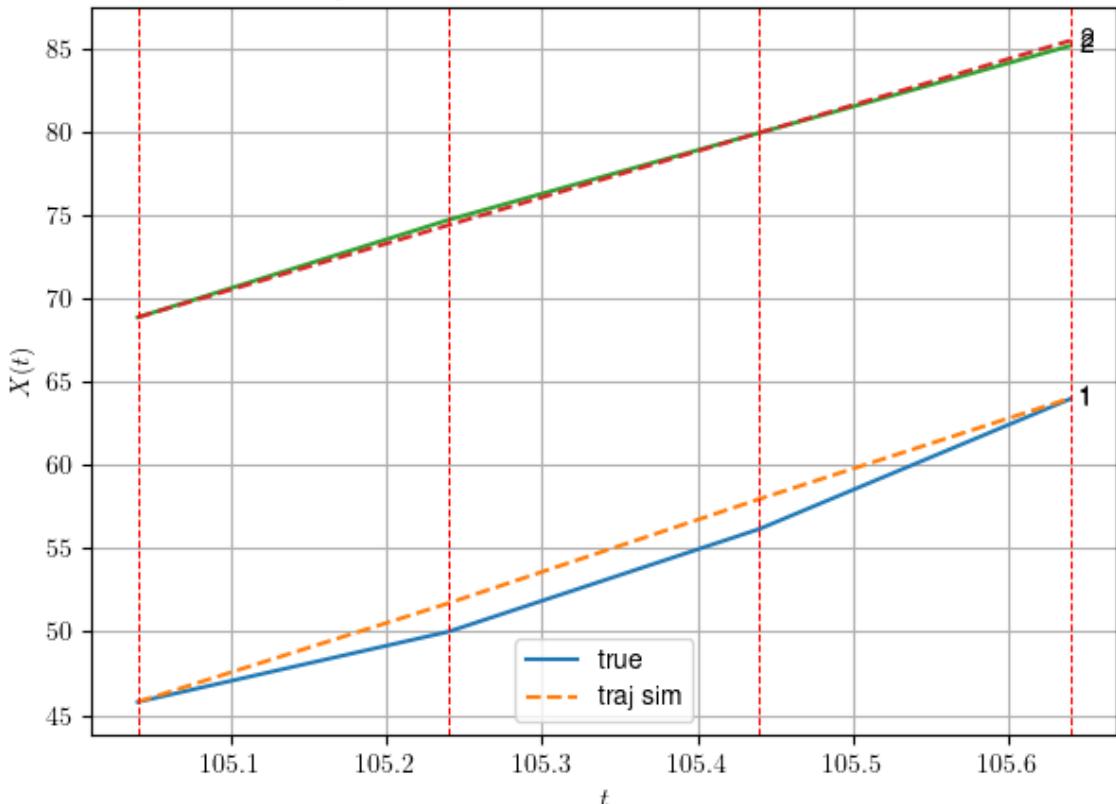
- Time interval n.2: [105.44, 105.64]
  - \* y\_true: [39.03276006]
  - \* v\_ann: [30.241985321044922, 27.688024621823832]

---

- \* err= 0.7934757689629749
- \* Learning rate NN = 5.9048988987342454e-06

\* diff = 0.0002331609847251448

df n. 8 - Scene n. 7, at it = 500



For scene 7/79

\* use LR\_NN=1e-05 with err=1.2030272674268125 at it=24  
 \* v0\_scn\_mean = 27.780503636933297  
 \* MAE = 0.6375308021965912

---



---

df n.8, scene n.8/79

---



---

We have 2 time intervals inside [116.04, 116.44]

- Time interval n.0: [116.04, 116.24]
  - \* y\_true: [26.70188245]
  - \* v\_ann: [26.31455421447754, 29.99050833829796]

---

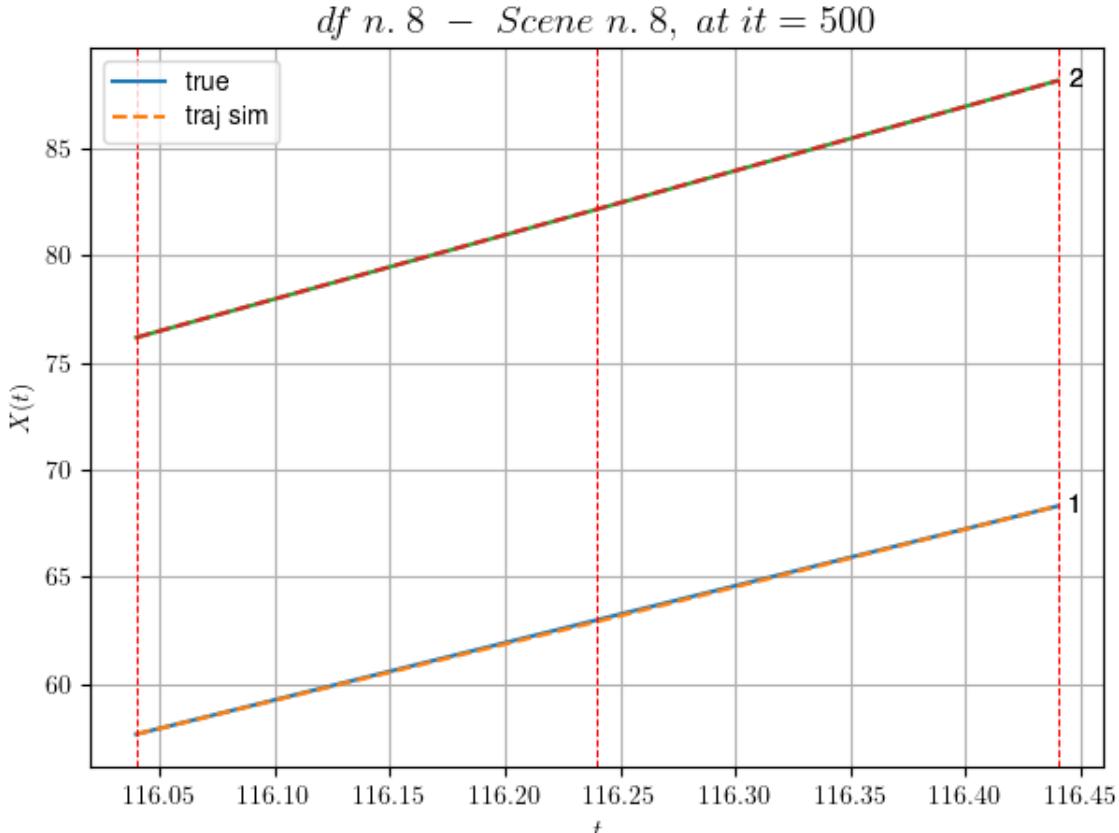
- Time interval n.1: [116.24, 116.44]
  - \* y\_true: [26.60221886]
  - \* v\_ann: [26.983436584472656, 29.99050833829796]

---



---

\* err= 0.0010296735618852255  
 \* Learning rate NN = 7.289998757187277e-05  
 \* diff = 2.5548076697892632e-05



For scene 8/79

- \* use LR\_NN=0.0001 with err=0.002407890468806972 at it=24
- \* v0\_scn\_mean = 29.990888004766145
- \* MAE = 0.0010296735618852255

---



---

df n.8, scene n.9/79

---



---

We have 3 time intervals inside [127.84,128.44]

- Time interval n.0: [127.84, 128.04]
  - \* y\_true: [21.61084593]
  - \* v\_ann: [22.740121841430664, 37.027384413421736]

---

- Time interval n.1: [128.04, 128.24]
  - \* y\_true: [29.37145511]
  - \* v\_ann: [24.876007080078125, 37.027384413421736]

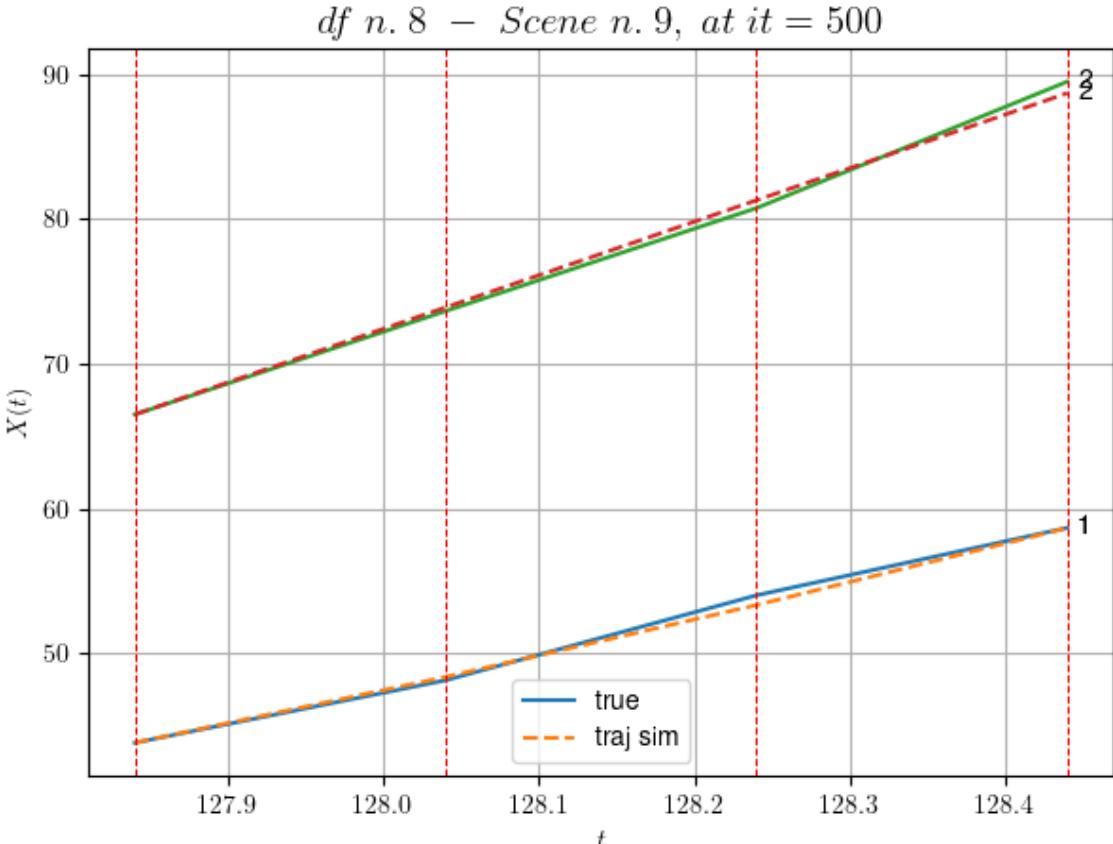
---

- Time interval n.2: [128.24, 128.44]
  - \* y\_true: [23.33137295]
  - \* v\_ann: [26.615135192871094, 37.027384413421736]

---

- \* err= 0.1876114041954437
- \* Learning rate NN = 5.904899080633186e-05

\* diff = 1.740482361212159e-05



For scene 9/79

- \* use LR\_NN=0.0001 with err=4.039562871684499 at it=24
- \* v0\_scn\_mean = 36.74628903693763
- \* MAE = 0.18725656466515317

---



---

df n.8, scene n.10/79

---



---

We have 2 time intervals inside [138.84, 139.24]

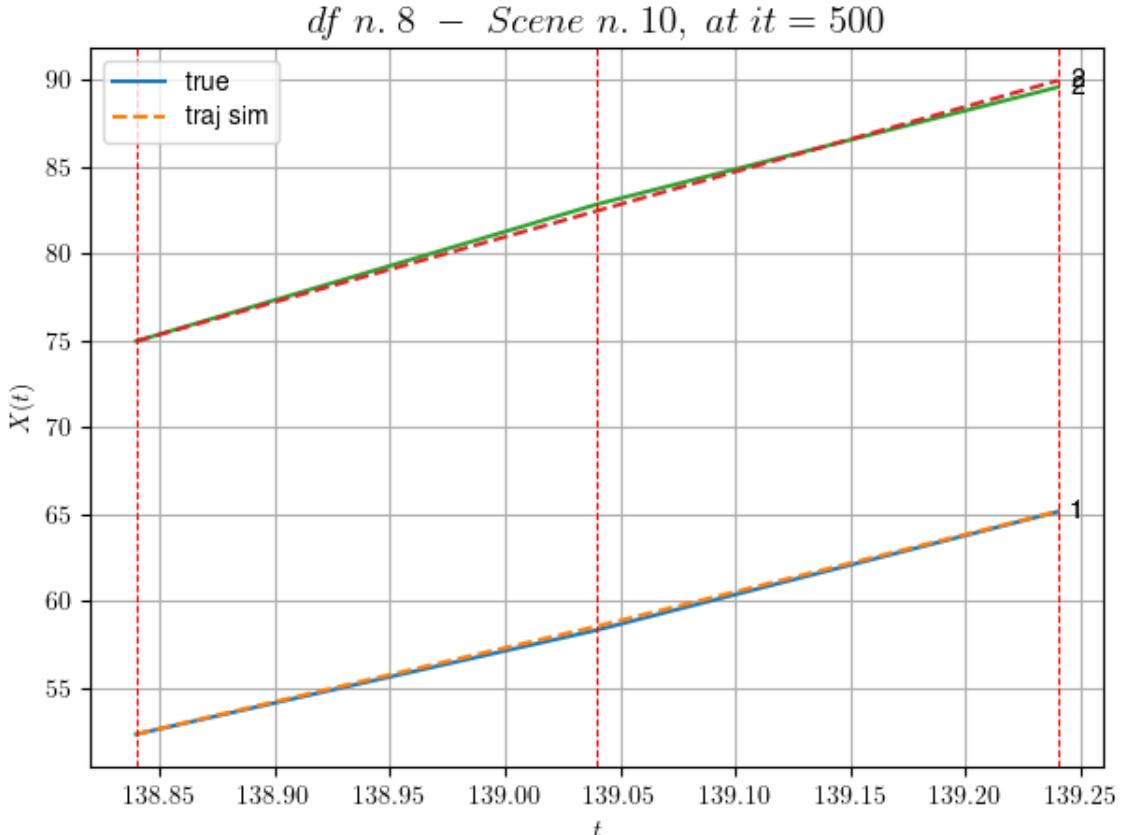
- Time interval n.0: [138.84, 139.04]
  - \* y\_true: [30.02321616]
  - \* v\_ann: [31.10831642150879, 37.55478677098891]

---

- Time interval n.1: [139.04, 139.24]
  - \* y\_true: [34.10253194]
  - \* v\_ann: [33.09226989746094, 37.55478677098891]

---

- \* err= 0.05601865753262004
- \* Learning rate NN = 7.289998757187277e-05
- \* diff = 2.1614479356973915e-05



For scene 10/79

- \* use LR\_NN=0.0001 with err=1.7658649182503277 at it=24
- \* v0\_scn\_mean = 37.252595300207766
- \* MAE = 0.052446892667144356

---



---

df n.8, scene n.11/79

---



---

We have 3 time intervals inside [154.24, 154.84]

- Time interval n.0: [154.24, 154.44]
  - \* y\_true: [16.35114044]
  - \* v\_ann: [17.47506332397461, 35.440393347036846]

---

- Time interval n.1: [154.44, 154.64]
  - \* y\_true: [25.35202142]
  - \* v\_ann: [27.02224349975586, 35.440393347036846]

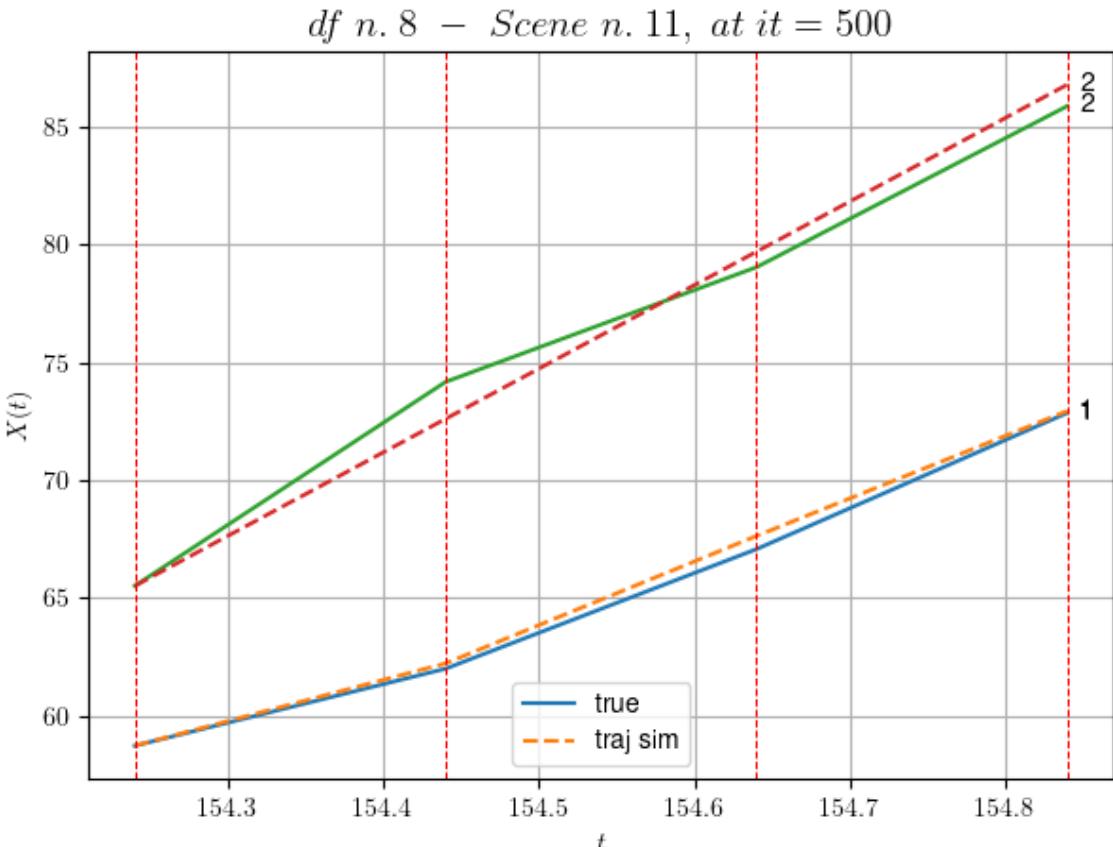
---

- Time interval n.2: [154.64, 154.84]
  - \* y\_true: [28.9027085]
  - \* v\_ann: [26.513248443603516, 35.440393347036846]

---

- \* err= 0.5104347972581589
- \* Learning rate NN = 5.904899080633186e-05

\* diff = 0.0008811089660586413



For scene 11/79

\* use LR\_NN=0.0001 with err=1.8791441377104097 at it=24  
 \* v0\_scn\_mean = 35.22277761319667  
 \* MAE = 0.5104347972581589

---



---

df n. 8, scene n. 12/79

---



---

We have 3 time intervals inside [166.84, 167.44]

- Time interval n.0: [166.84, 167.04]
  - \* y\_true: [14.80039759]
  - \* v\_ann: [16.42635154724121, 15.667717542016721]

---

- Time interval n.1: [167.04, 167.24]
  - \* y\_true: [20.4006375]
  - \* v\_ann: [15.953221321105957, 15.667717542016721]

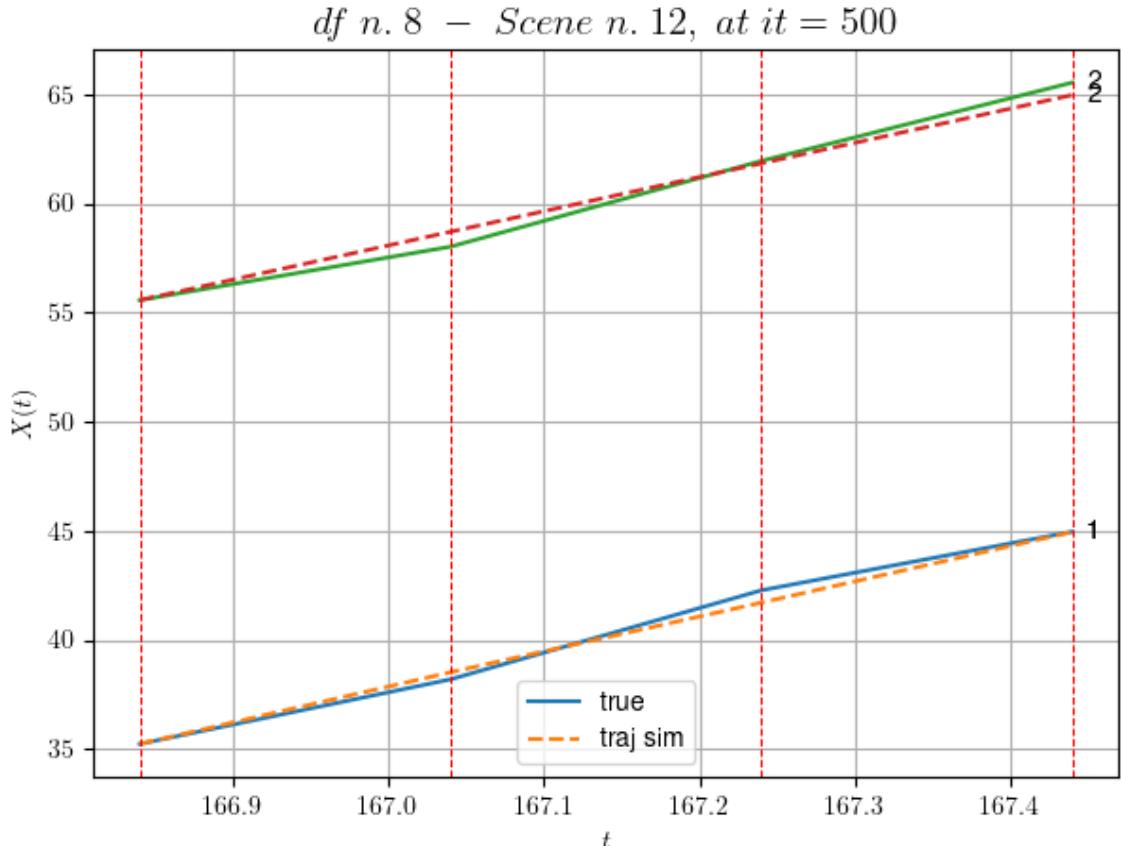
---

- Time interval n.2: [167.24, 167.44]
  - \* y\_true: [13.420495]
  - \* v\_ann: [16.18827247619629, 15.667717542016721]

---

\* err= 0.15364169887633453

\* Learning rate NN = 5.904899080633186e-05  
 \* diff = 1.1998240550259442e-06



For scene 12/79

\* use LR\_NN=0.0001 with err=13.638592805944704 at it=24  
 \* v0\_scn\_mean = 16.24100884022624  
 \* MAE = 0.14355641419141837

---



---

df n.8, scene n.13/79

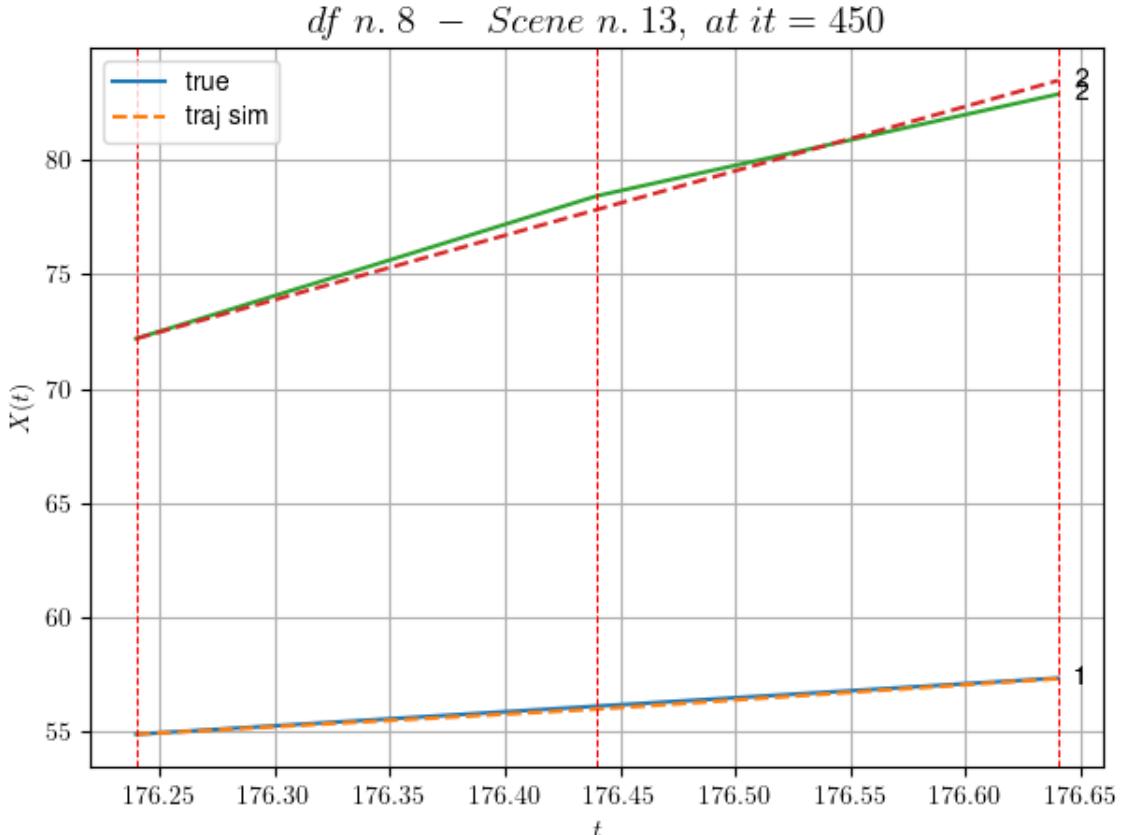
---



---

We have 2 time intervals inside [176.24,176.64]

\* err= 0.12244302096042978  
 \* Learning rate NN = 3.6449993785936385e-05  
 \* diff = 5.896242734754198e-07



For scene 13/79

- \* use LR\_NN=5e-05 with err=0.30051631068652207 at it=24
- \* v0\_scn\_mean = 28.289329939995596
- \* MAE = 0.12244177435190805

---



---

df n.8, scene n.14/79

---



---

We have 4 time intervals inside [178.44, 179.24]

- Time interval n.0: [178.44, 178.64]
  - \* y\_true: [22.76155551]
  - \* v\_ann: [30.59684181213379, 12.308982889931853]

---

- Time interval n.1: [178.64, 178.84]
  - \* y\_true: [36.29307367]
  - \* v\_ann: [23.222942352294922, 12.308982889931853]

---

- Time interval n.2: [178.84, 179.04]
  - \* y\_true: [16.78302591]
  - \* v\_ann: [14.184629440307617, 12.308982889931853]

---

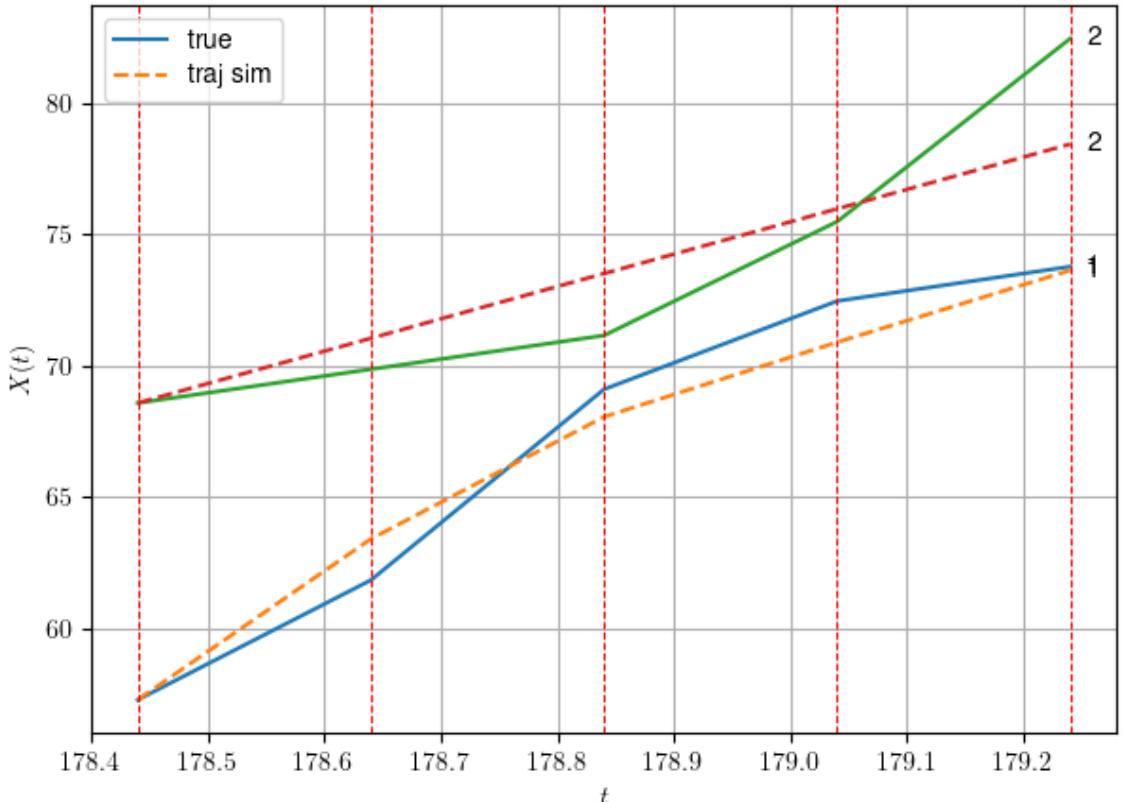
- Time interval n.3: [179.04, 179.24]
  - \* y\_true: [6.55070095]

```
* v_ann: [13.687056541442871, 12.308982889931853]
```

---

```
* err= 2.934025658634675
* Learning rate NN = 4.7829678806010634e-05
* diff = 0.0021450948205226084
```

*df n. 8 – Scene n. 14, at it = 500*



For scene 14/79

```
* use LR_NN=0.0001 with err=35.49659744653011 at it=24
* v0 scn mean = 13.016623574199405
* MAE = 2.675757153198846
```

---



---

df n.8, scene n.15/79

---



---

We have 5 time intervals inside [190.84, 191.84]

- Time interval n.0: [190.84, 191.04]
  - \* y\_true: [30.51246457]
  - \* v\_ann: [15.636226654052734, 12.068548421445621]

---

- Time interval n.1: [191.04, 191.24]
  - \* y\_true: [14.21130177]
  - \* v\_ann: [7.703099250793457, 12.068548421445621]

---

- Time interval n.2: [191.24, 191.44]

```
* y_true: [4.75758557]
* v_ann: [7.507887363433838, 12.068548421445621]
```

---

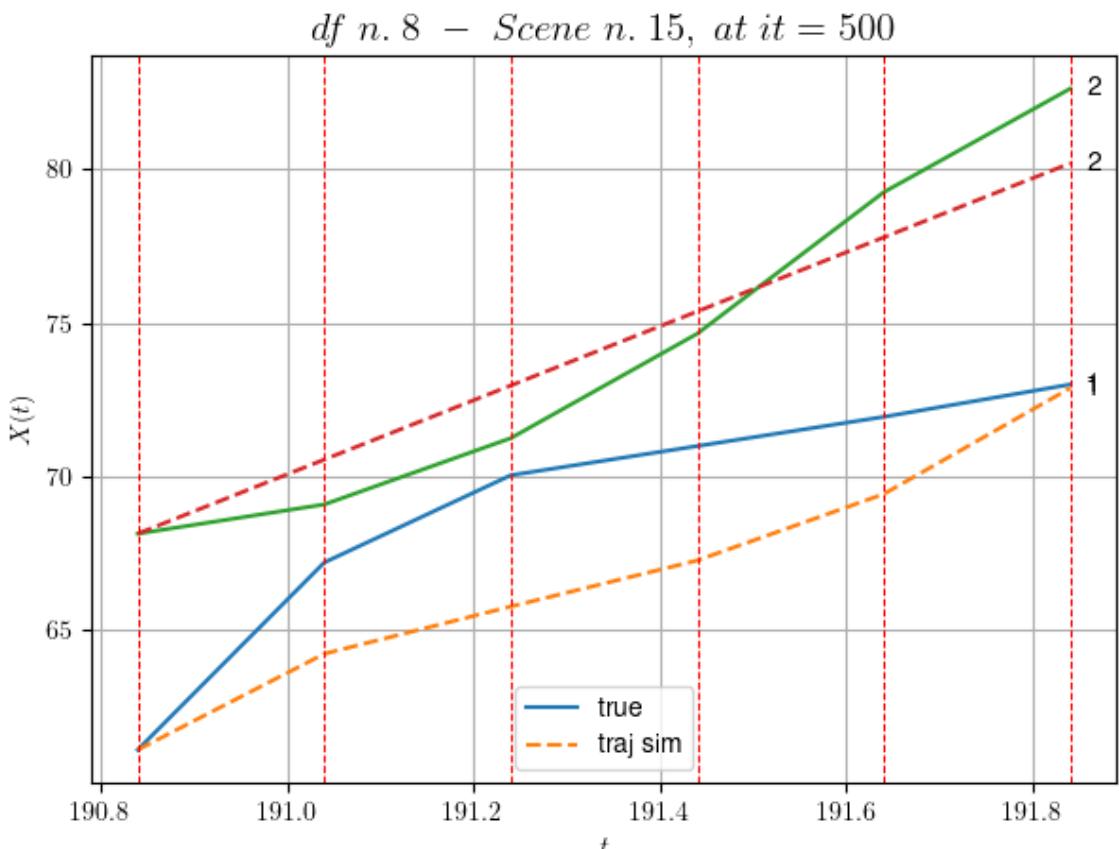
```
- Time interval n.3: [191.44, 191.64]
* y_true: [4.75758557]
* v_ann: [10.819578170776367, 12.068548421445621]
```

---

```
- Time interval n.4: [191.64, 191.84]
* y_true: [5.27623096]
* v_ann: [17.26917266845703, 12.068548421445621]
```

---

```
* err= 5.088006459165635
* Learning rate NN = 0.0001937102060765028
* diff = 0.032801784860367
```



For scene 15/79

```
* use LR_NN=0.0005 with err=59.90998526765141 at it=24
* v0_scn_mean = 12.785806484450696
* MAE = 4.724282847633274
```

---



---



---

df n.8, scene n.16/79

---



---



---



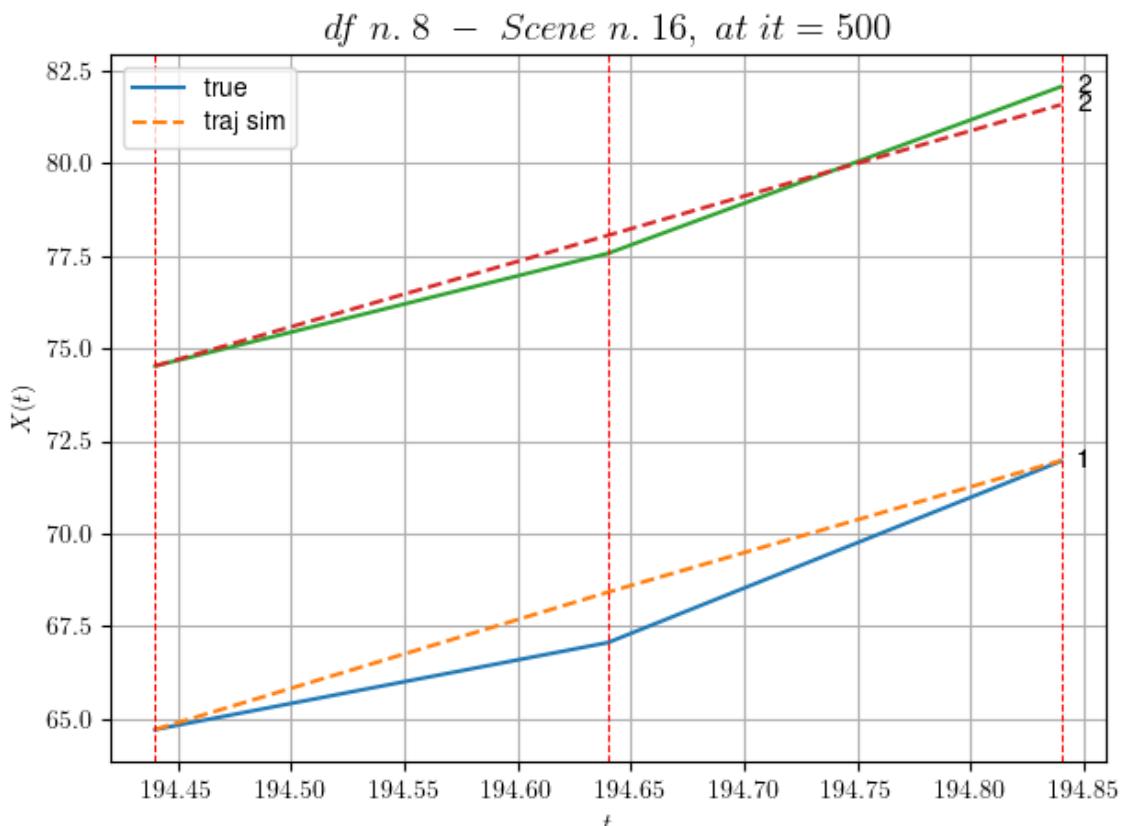
---

We have 2 time intervals inside [194.44,194.84]

```
- Time interval n.0: [194.44, 194.64]
* y_true: [11.75098765]
* v_ann: [18.560653686523438, 17.648704998178008]
```

```
- Time interval n.1: [194.64, 194.84]
* y_true: [24.50229075]
* v_ann: [17.774677276611328, 17.648704998178008]
```

```
* err= 0.3883769321649098
* Learning rate NN = 0.00036449998151510954
* diff = 7.450188046048689e-05
```



For scene 16/79

```
* use LR_NN=0.0005 with err=5.094289410945171 at it=24
* v0_scn_mean = 18.14275679815636
* MAE = 0.37878824771594305
```

---



---

df n.8, scene n.17/79

---



---

We have 4 time intervals inside [197.84,198.64]

```
- Time interval n.0: [197.84, 198.04]
* y_true: [22.53153444]
* v_ann: [13.306655883789062, 23.275091763732032]
```

```

- Time interval n.1: [198.04, 198.24]
 * y_true: [13.78102172]
 * v_ann: [16.831939697265625, 23.275091763732032]

```

---

```

- Time interval n.2: [198.24, 198.44]
 * y_true: [11.85098834]
 * v_ann: [17.05954360961914, 23.275091763732032]

```

---

```

- Time interval n.3: [198.44, 198.64]
 * y_true: [15.76141547]
 * v_ann: [15.486809730529785, 23.275091763732032]

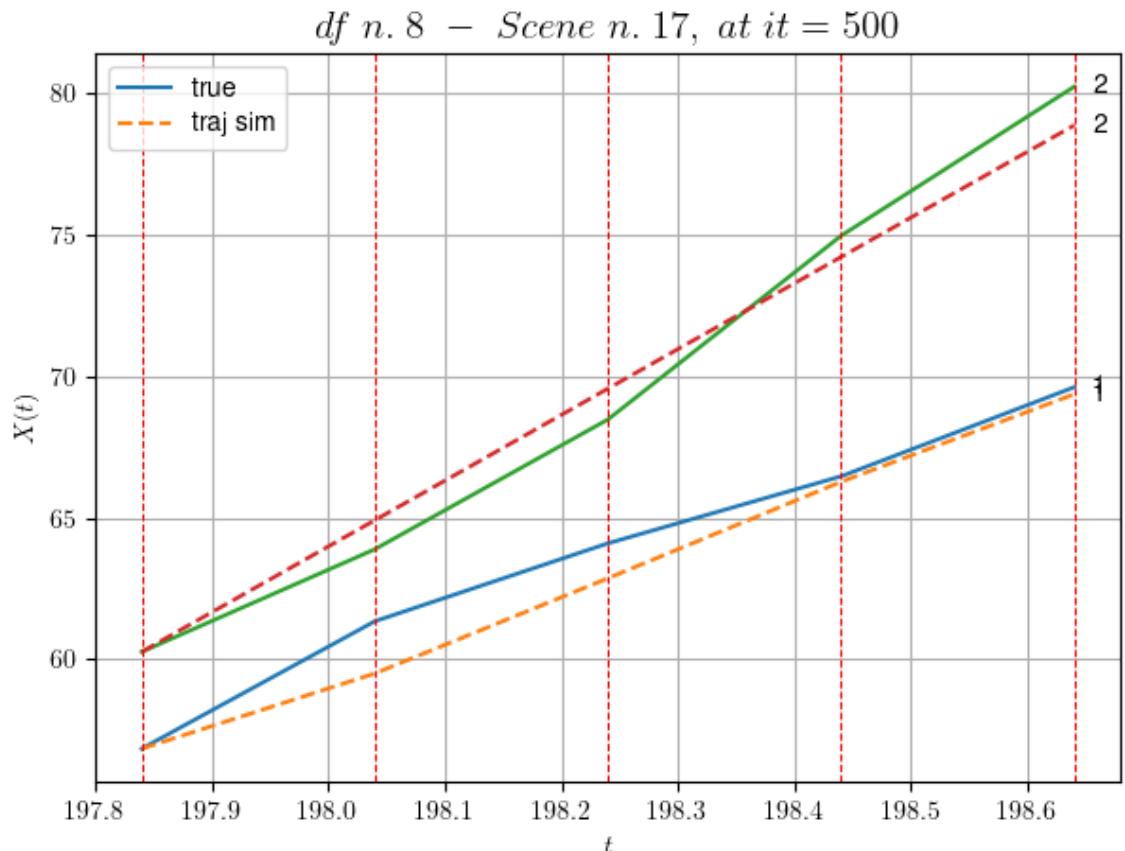
```

---

```

* err= 0.9706651141751719
* Learning rate NN = 0.002391484100371599
* diff = 0.022045372491005244

```



For scene 17/79

```

* use LR_NN=0.005 with err=6.056607906235415 at it=24
* v0_scn_mean = 23.544088093131695
* MAE = 0.9706651141751719

```

---



---

df n.8, scene n.18/79

---



---

We have 6 time intervals inside [210.84, 212.04]

- Time interval n.0: [210.84, 211.04]
    - \* y\_true: [18.40045523]
    - \* v\_ann: [23.105894088745117, 21.37734163264239]
- 

- Time interval n.1: [211.04, 211.24]

- \* y\_true: [21.20064657]
    - \* v\_ann: [23.733301162719727, 21.37734163264239]
- 

- Time interval n.2: [211.24, 211.44]

- \* y\_true: [18.20066994]
    - \* v\_ann: [24.064651489257812, 21.37734163264239]
- 

- Time interval n.3: [211.44, 211.64]

- \* y\_true: [25.15111829]
    - \* v\_ann: [23.94101905822754, 21.37734163264239]
- 

- Time interval n.4: [211.64, 211.84]

- \* y\_true: [24.05129892]
    - \* v\_ann: [23.09523582458496, 21.37734163264239]
- 

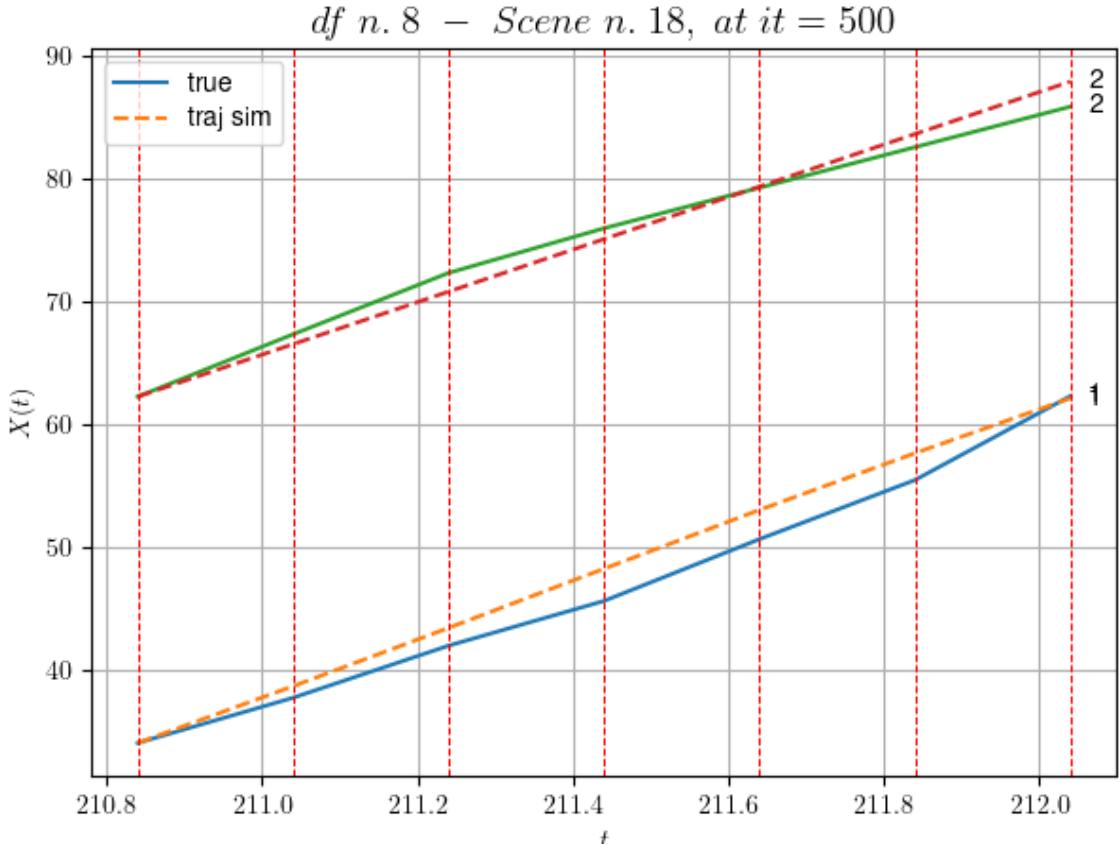
- Time interval n.5: [211.84, 212.04]

- \* y\_true: [34.2022758]
    - \* v\_ann: [22.35207748413086, 21.37734163264239]
- 

\* err= 2.09951529451953

\* Learning rate NN = 3.138104830213706e-06

\* diff = 0.004571775789431687



For scene 18/79

- \* use LR\_NN=1e-05 with err=23.91104707660389 at it=24
- \* v0\_scn\_mean = 21.722247967270842
- \* MAE = 2.097737249176242

---



---

df n.8, scene n.19/79

---



---

We have 11 time intervals inside [250.44, 252.64]

- Time interval n.0: [250.44, 250.64]
  - \* y\_true: [16.04072287]
  - \* v\_ann: [17.146886825561523, 14.644824448517639]

---

- Time interval n.1: [250.64, 250.84]
  - \* y\_true: [15.51077127]
  - \* v\_ann: [15.971349716186523, 14.644824448517639]

---

- Time interval n.2: [250.84, 251.04]
  - \* y\_true: [15.34089466]
  - \* v\_ann: [15.881916999816895, 14.644824448517639]

---

- Time interval n.3: [251.04, 251.24]
  - \* y\_true: [16.53189254]

```
* v_ann: [15.982709884643555, 14.644824448517639]
```

```
- Time interval n.4: [251.24, 251.44]
* y_true: [15.66111032]
* v_ann: [15.802640914916992, 14.644824448517639]
```

```
- Time interval n.5: [251.44, 251.64]
* y_true: [15.55114817]
* v_ann: [15.679044723510742, 14.644824448517639]
```

```
- Time interval n.6: [251.64, 251.84]
* y_true: [17.2315068]
* v_ann: [16.24262809753418, 14.644824448517639]
```

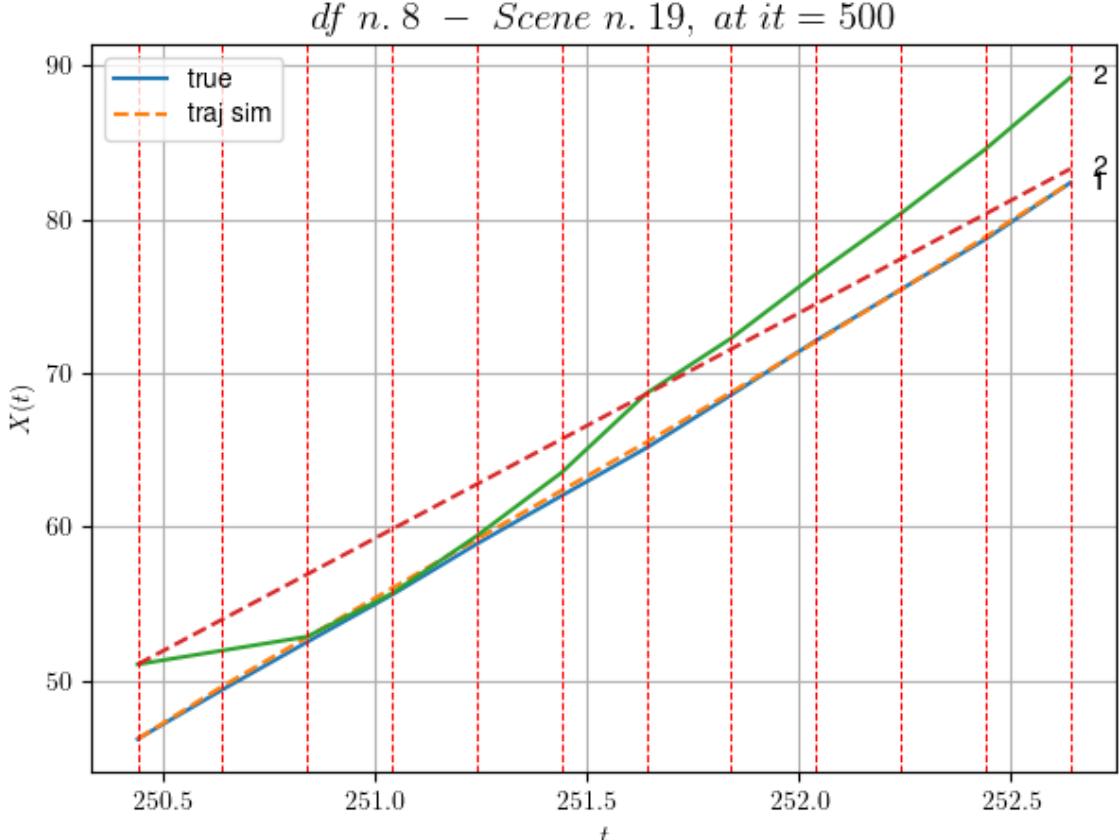
```
- Time interval n.7: [251.84, 252.04]
* y_true: [17.65159646]
* v_ann: [16.432146072387695, 14.644824448517639]
```

```
- Time interval n.8: [252.04, 252.24]
* y_true: [16.61174803]
* v_ann: [16.90951156616211, 14.644824448517639]
```

```
- Time interval n.9: [252.24, 252.44]
* y_true: [16.35178592]
* v_ann: [17.198678970336914, 14.644824448517639]
```

```
- Time interval n.10: [252.44, 252.64]
* y_true: [18.37232882]
* v_ann: [17.608240127563477, 14.644824448517639]
```

```
* err= 5.034156711388353
* Learning rate NN = 0.000547094619832933
* diff = 0.0005154193063638957
```



For scene 19/79

- \* use LR\_NN=0.005 with err=176.29110459215343 at it=24
- \* v0\_scn\_mean = 15.259031470459691
- \* MAE = 4.131289755512911

---



---

df n.8, scene n.20/79

---



---

We have 5 time intervals inside [276.64, 277.64]

- Time interval n.0: [276.64, 276.84]
  - \* y\_true: [19.91101059]
  - \* v\_ann: [22.218059539794922, 26.4905088460641]

---

- Time interval n.1: [276.84, 277.04]
  - \* y\_true: [24.60145519]
  - \* v\_ann: [20.697450637817383, 26.4905088460641]

---

- Time interval n.2: [277.04, 277.24]
  - \* y\_true: [20.33137939]
  - \* v\_ann: [21.109914779663086, 26.4905088460641]

---

- Time interval n.3: [277.24, 277.44]
  - \* y\_true: [20.36164579]

```
* v_ann: [22.460105895996094, 26.4905088460641]
```

---

```
- Time interval n.4: [277.44, 277.64]
```

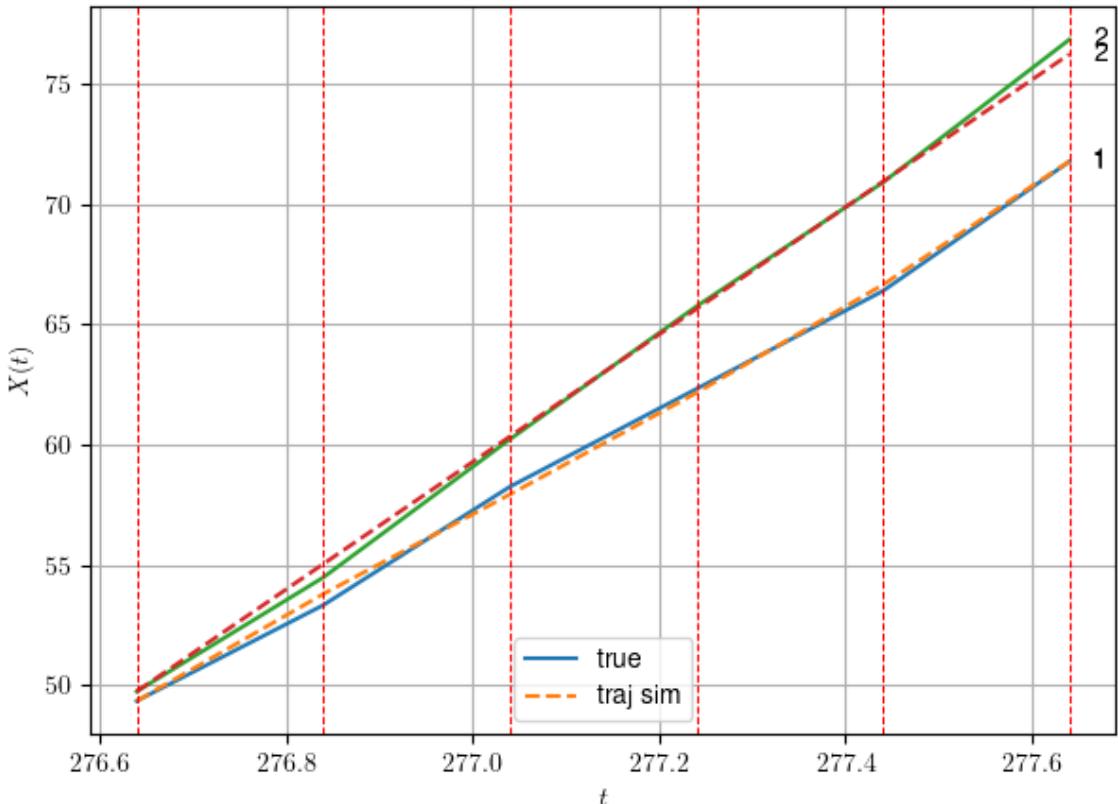
```
* y_true: [26.89241196]
```

```
* v_ann: [25.682554244995117, 26.4905088460641]
```

---

```
* err= 0.09313050180912072
* Learning rate NN = 0.0019371019443497062
* diff = 0.0018963393783846816
```

*df n. 8 – Scene n. 20, at it = 500*



For scene 20/79

```
* use LR_NN=0.005 with err=2.369794081808609 at it=24
```

```
* v0_scn_mean = 26.630888492195457
```

```
* MAE = 0.09313050180912072
```

---



---



---

df n.8, scene n.21/79

---



---



---



---



---



---

We have 5 time intervals inside [278.64, 279.64]

```
- Time interval n.0: [278.64, 278.84]
```

```
* y_true: [25.33138011]
```

```
* v_ann: [20.667556762695312, 27.407259315732233]
```

---



---



---

```
- Time interval n.1: [278.84, 279.04]
```

```
* y_true: [26.10168972]
* v_ann: [22.23664093017578, 27.407259315732233]
```

---

```
- Time interval n.2: [279.04, 279.24]
* y_true: [28.27219854]
* v_ann: [22.919769287109375, 27.407259315732233]
```

---

```
- Time interval n.3: [279.24, 279.44]
* y_true: [15.3013247]
* v_ann: [24.935144424438477, 27.407259315732233]
```

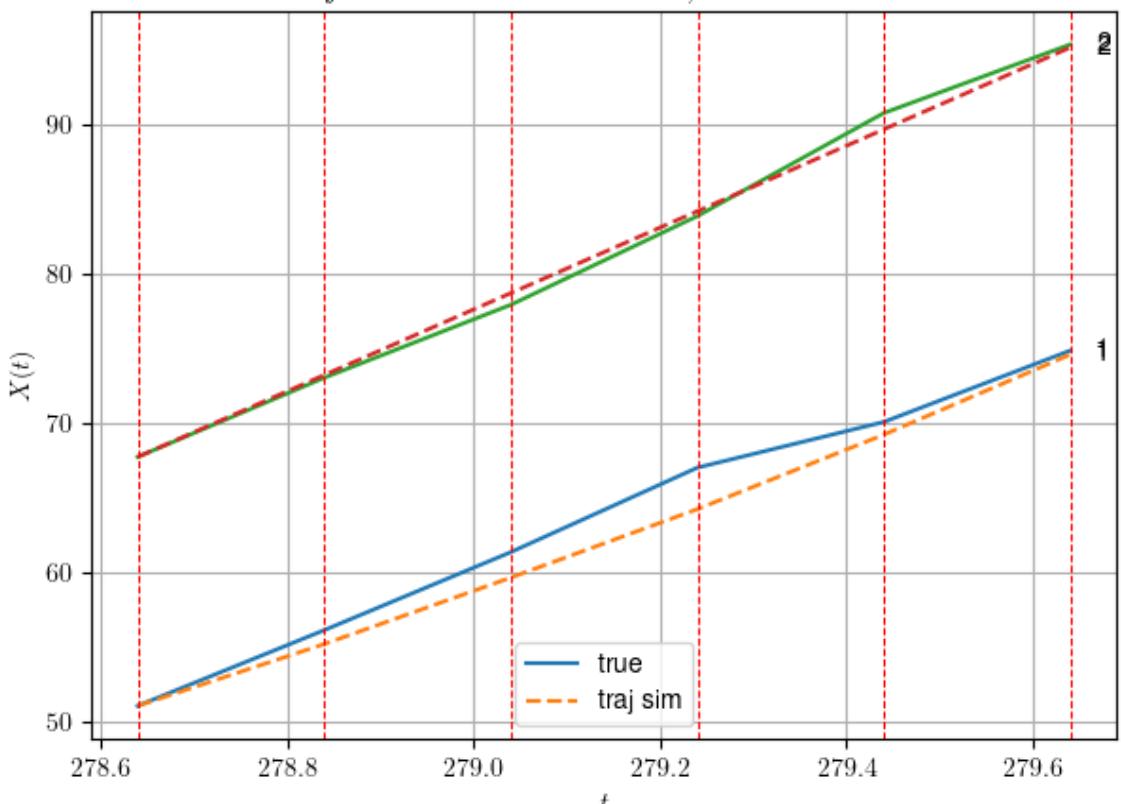
---

```
- Time interval n.4: [279.44, 279.64]
* y_true: [23.90239058]
* v_ann: [26.8071231842041, 27.407259315732233]
```

---

```
* err= 1.189052010683366
* Learning rate NN = 0.0001937102060765028
* diff = 0.021537405414699062
```

*df n. 8 – Scene n. 21, at it = 500*



For scene 21/79

```
* use LR_NN=0.0005 with err=2.0603952816497966 at it=24
* v0_scn_mean = 27.510968943083604
* MAE = 1.177680856988535
```

df n.8, scene n.22/79

We have 4 time intervals inside [281.44, 282.24]

- Time interval n.0: [281.44, 281.64]

\* y\_true: [31.54245626]

\* v\_ann: [31.57748794555664, 25.06017200875261]

- Time interval n.1: [281.64, 281.84]

\* y\_true: [26.752427]

\* v\_ann: [28.481063842773438, 25.06017200875261]

- Time interval n.2: [281.84, 282.04]

\* y\_true: [30.20476381]

\* v\_ann: [28.611324310302734, 25.06017200875261]

- Time interval n.3: [282.04, 282.24]

\* y\_true: [23.94300381]

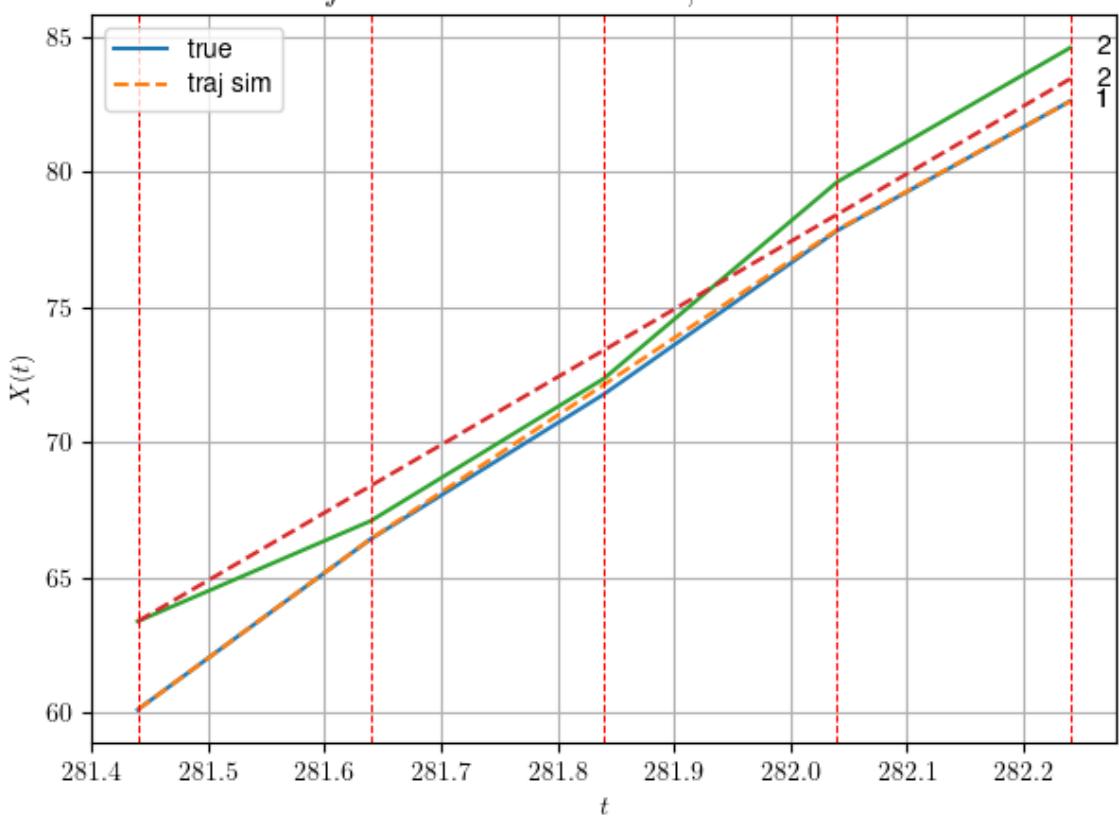
\* v\_ann: [23.745559692382812, 25.06017200875261]

\* err= 0.5666278567188976

\* Learning rate NN = 0.002391484100371599

\* diff = 0.00014904147254901634

df n. 8 – Scene n. 22, at it = 500



```
For scene 22/79
* use LR_NN=0.005 with err=4.459183481178107 at it=24
* v0_scn_mean = 25.25776512836496
* MAE = 0.4898922291062078
```

```
=====
=====
```

```
df n.8, scene n.23/79
```

```
=====
=====
```

```
We have 6 time intervals inside [283.84,285.04]
```

```
- Time interval n.0: [283.84, 284.04]
 * y_true: [21.50116485]
 * v_ann: [19.263721466064453, 31.024373752742626]
```

```


```

```
- Time interval n.1: [284.04, 284.24]
 * y_true: [21.05133002]
 * v_ann: [19.63144874572754, 31.024373752742626]
```

```


```

```
- Time interval n.2: [284.24, 284.44]
 * y_true: [35.30269143]
 * v_ann: [20.199235916137695, 31.024373752742626]
```

```


```

```
- Time interval n.3: [284.44, 284.64]
 * y_true: [11.75103348]
 * v_ann: [24.259897232055664, 31.024373752742626]
```

```


```

```
- Time interval n.4: [284.64, 284.84]
 * y_true: [17.05163021]
 * v_ann: [22.080533981323242, 31.024373752742626]
```

```

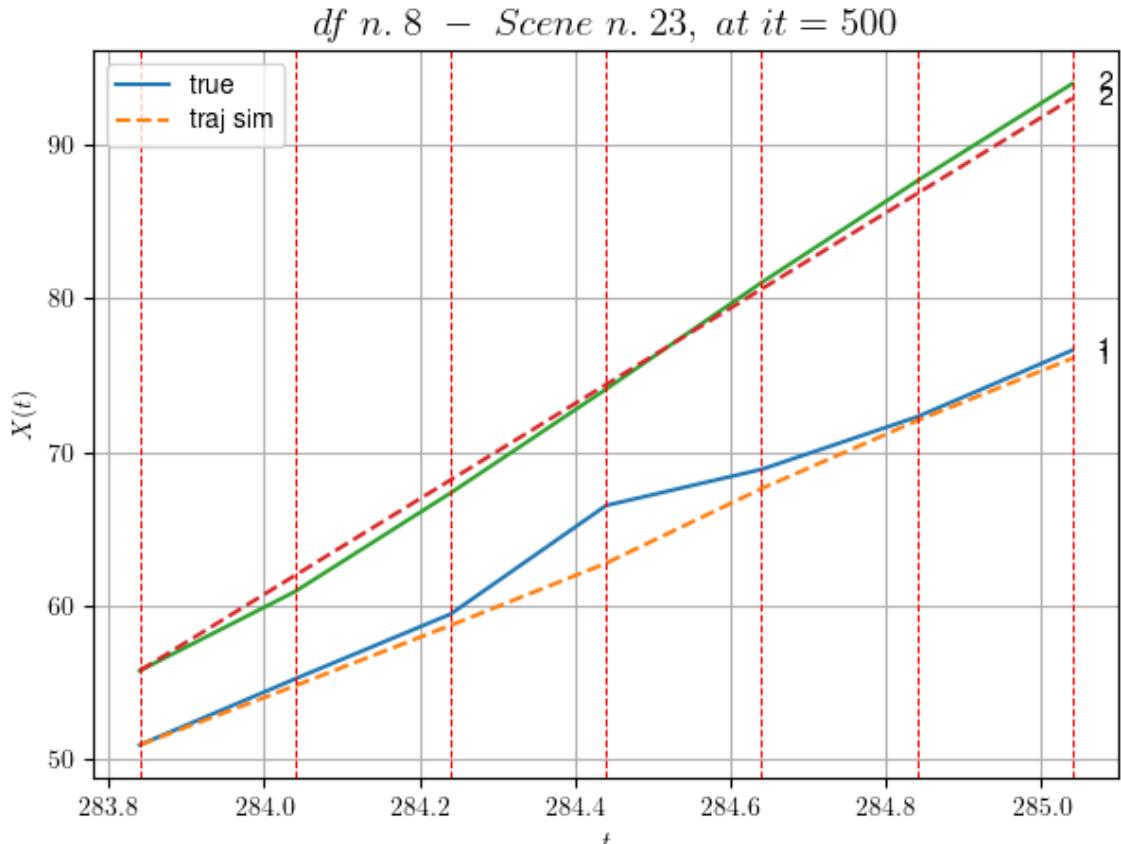

```

```
- Time interval n.5: [284.84, 285.04]
 * y_true: [21.70230716]
 * v_ann: [20.277061462402344, 31.024373752742626]
```

```


```

```
* err= 1.4575727156217826
* Learning rate NN = 0.00031381050939671695
* diff = 0.15216709173795762
```



For scene 23/79

- \* use LR\_NN=0.001 with err=9.801873098279495 at it=24
  - \* v0\_scn\_mean = 30.983398802640842
  - \* MAE = 1.4575727156217826
- 
- 

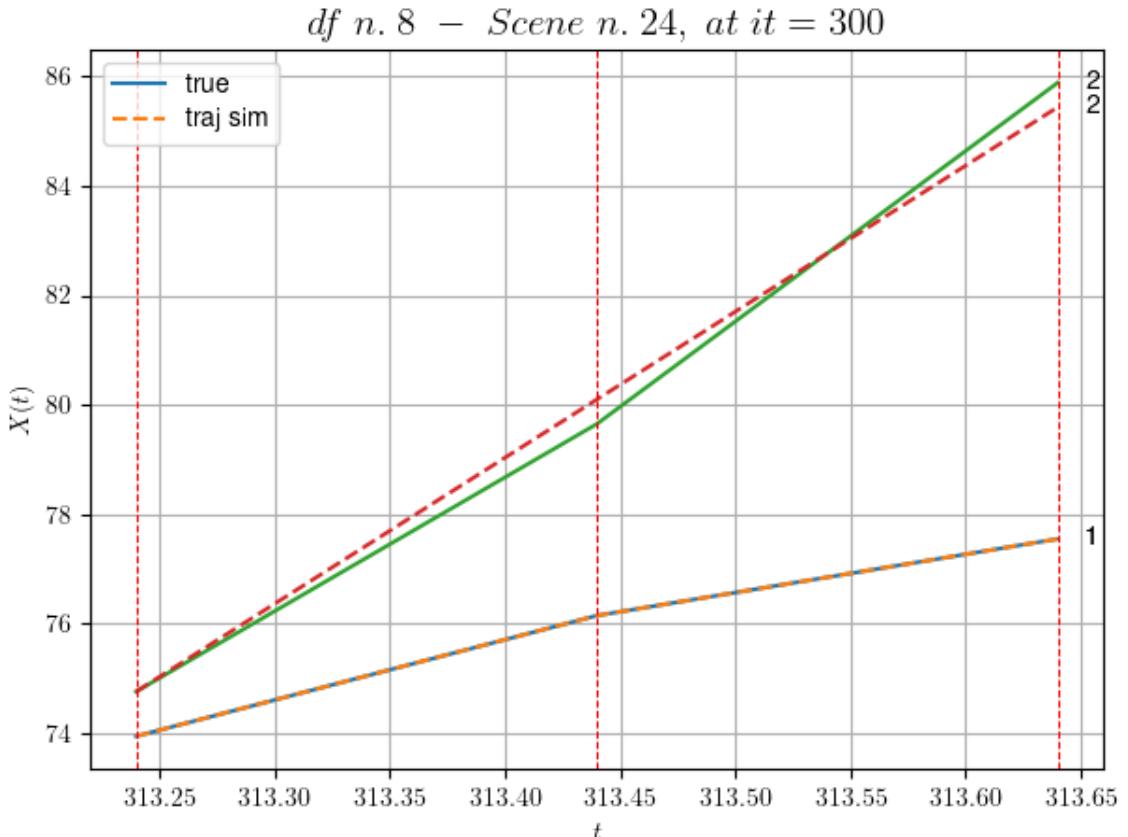
df n.8, scene n.24/79

---

---

We have 2 time intervals inside [313.24, 313.64]

- \* err= 0.06676564390545556
- \* Learning rate NN = 0.008099999278783798
- \* diff = 2.441457904178712e-07



For scene 24/79

- \* use LR\_NN=0.01 with err=0.3319796347412178 at it=24
- \* v0\_scn\_mean = 26.918758772440118
- \* MAE = 0.06008912928052358

---



---

df n.8, scene n.25/79

---



---

We have 5 time intervals inside [319.44, 320.44]

- Time interval n.0: [319.44, 319.64]
  - \* y\_true: [9.82525355]
  - \* v\_ann: [6.816274166107178, 24.072557838554268]

---

- Time interval n.1: [319.64, 319.84]
  - \* y\_true: [9.82525355]
  - \* v\_ann: [7.077044486999512, 24.072557838554268]

---

- Time interval n.2: [319.84, 320.04]
  - \* y\_true: [7.3502267]
  - \* v\_ann: [7.491257667541504, 24.072557838554268]

---

- Time interval n.3: [320.04, 320.24]
  - \* y\_true: [7.3502267]

```
* v_ann: [8.013580322265625, 24.072557838554268]
```

---

```
- Time interval n.4: [320.24, 320.44]
```

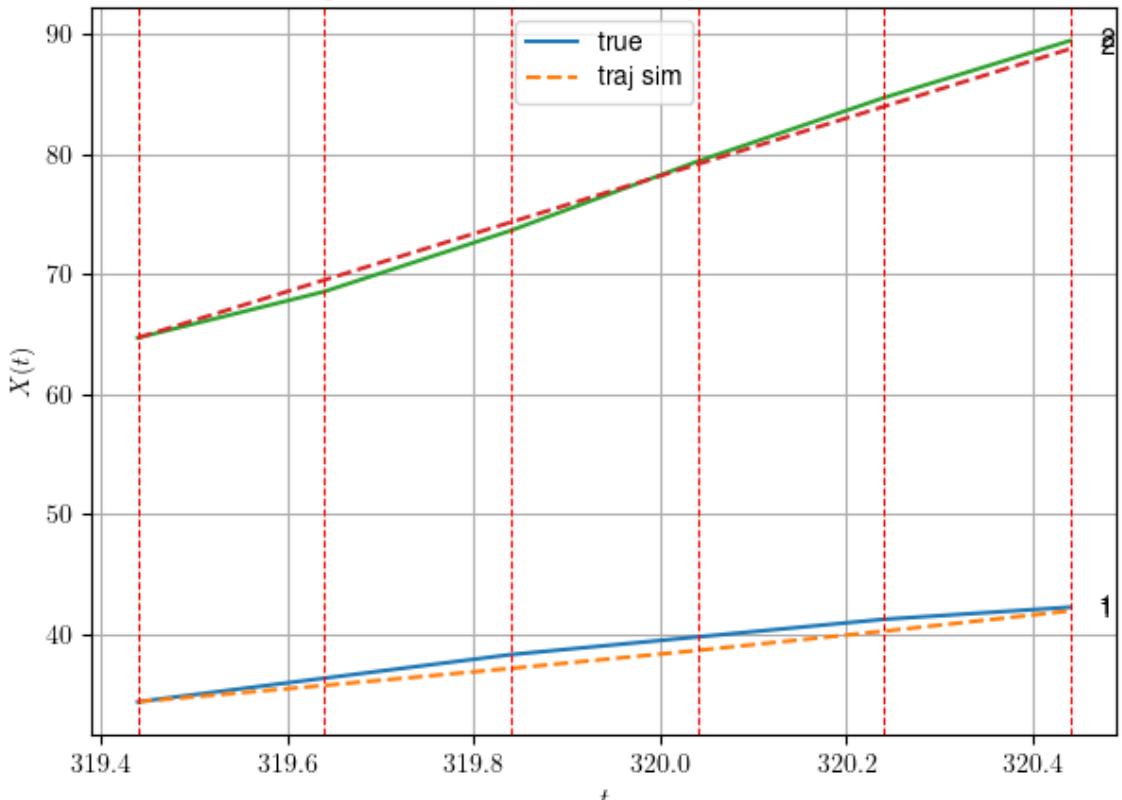
```
* y_true: [5.05017556]
```

```
* v_ann: [8.468602180480957, 24.072557838554268]
```

---

```
* err= 0.5421127111865889
* Learning rate NN = 3.874203684972599e-06
* diff = 0.0007959077368704381
```

*df n. 8 – Scene n. 25, at it = 500*



For scene 25/79

```
* use LR_NN=1e-05 with err=6.072039307242994 at it=24
```

```
* v0_scn_mean = 24.309655524966466
```

```
* MAE = 0.5190612489759703
```

---



---



---

df n.8, scene n.26/79

---



---



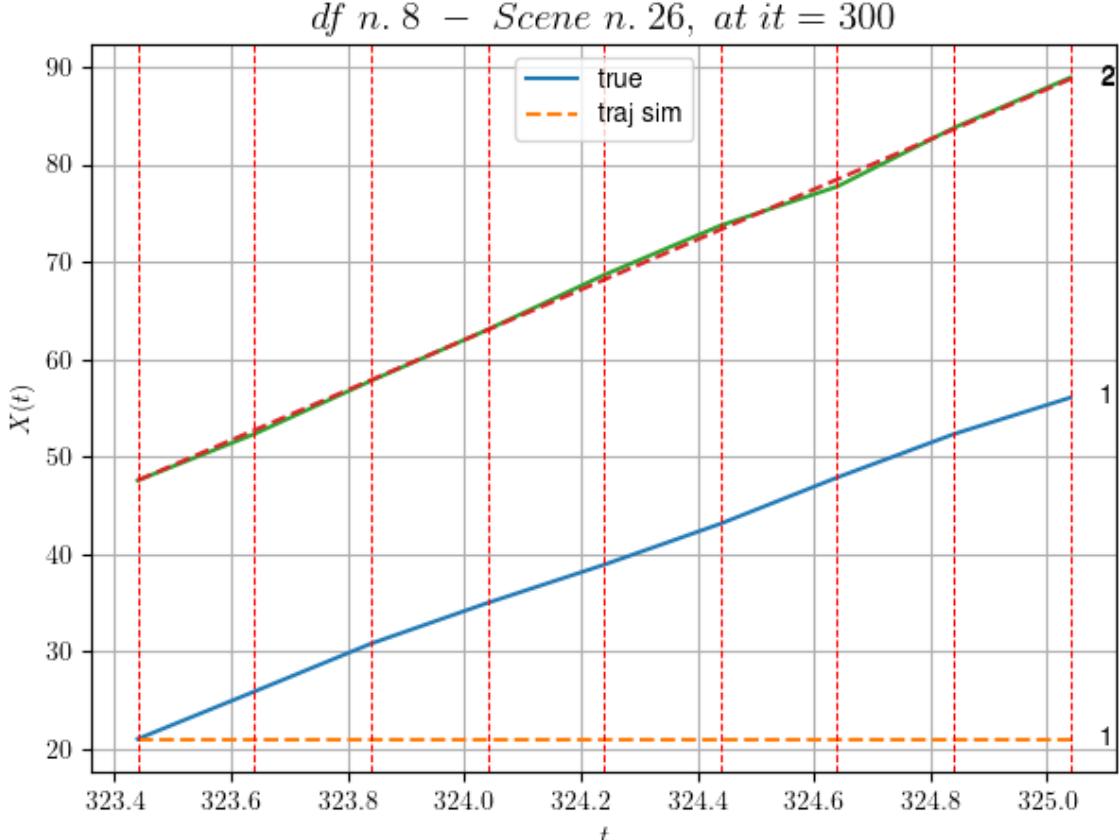
---

We have 8 time intervals inside [323.44,325.04]

```
* err= 225.20546793548124
```

```
* Learning rate NN = 0.0003874204121530056
```

```
* diff = 3.039981493202504e-07
```



For scene 26/79

- \* use LR\_NN=0.001 with err=8.593550624506312 at it=24
- \* v0\_scn\_mean = 26.04114939048839
- \* MAE = 84.40183599393889

---



---

df n.8, scene n.27/79

---



---

We have 9 time intervals inside [327.84, 329.64]

- Time interval n.0: [327.84, 328.04]
  - \* y\_true: [22.06055829]
  - \* v\_ann: [28.868135452270508, 23.31808413019458]

---

- Time interval n.1: [328.04, 328.24]
  - \* y\_true: [23.96078165]
  - \* v\_ann: [27.10512351989746, 23.31808413019458]

---

- Time interval n.2: [328.24, 328.44]
  - \* y\_true: [24.43098932]
  - \* v\_ann: [26.616107940673828, 23.31808413019458]

---

- Time interval n.3: [328.44, 328.64]
  - \* y\_true: [18.6708951]

```
* v_ann: [25.341833114624023, 23.31808413019458]
```

```
- Time interval n.4: [328.64, 328.84]
* y_true: [31.01184421]
* v_ann: [24.217124938964844, 23.31808413019458]
```

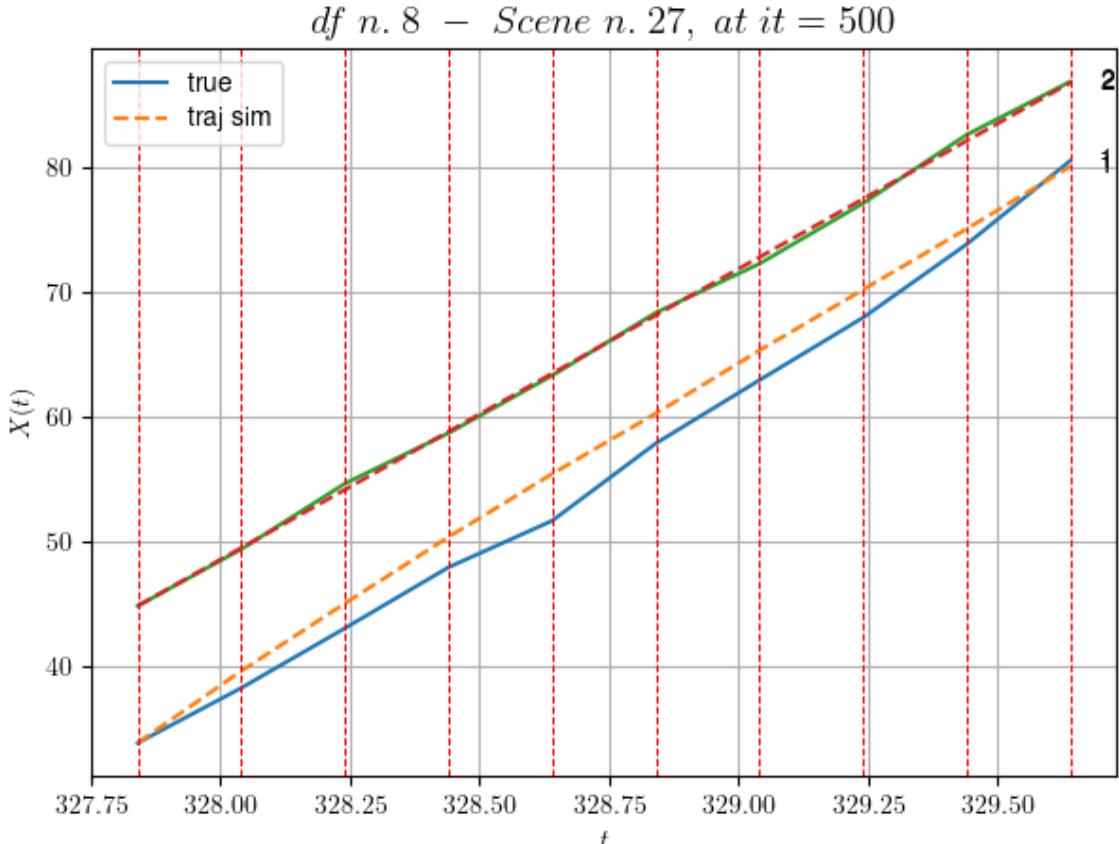
```
- Time interval n.5: [328.84, 329.04]
* y_true: [25.37177893]
* v_ann: [25.24677848815918, 23.31808413019458]
```

```
- Time interval n.6: [329.04, 329.24]
* y_true: [25.06209083]
* v_ann: [24.389453887939453, 23.31808413019458]
```

```
- Time interval n.7: [329.24, 329.44]
* y_true: [29.432885]
* v_ann: [24.390125274658203, 23.31808413019458]
```

```
- Time interval n.8: [329.44, 329.64]
* y_true: [33.52388826]
* v_ann: [25.02739143371582, 23.31808413019458]
```

```
* err= 2.252130440944394
* Learning rate NN = 0.00016677174426149577
* diff = 0.10506618850757787
```



For scene 27/79

- \* use LR\_NN=0.001 with err=27.03254501003732 at it=24
- \* v0\_scn\_mean = 23.58536076493581
- \* MAE = 1.5868672234384735

---



---

df n.8, scene n.28/79

---



---

We have 4 time intervals inside [335.04, 335.84]

- Time interval n.0: [335.04, 335.24]
  - \* y\_true: [24.8512221]
  - \* v\_ann: [23.084957122802734, 23.061271780933527]

---

- Time interval n.1: [335.24, 335.44]
  - \* y\_true: [19.04114233]
  - \* v\_ann: [22.30579948425293, 23.061271780933527]

---

- Time interval n.2: [335.44, 335.64]
  - \* y\_true: [28.30193393]
  - \* v\_ann: [23.59374237060547, 23.061271780933527]

---

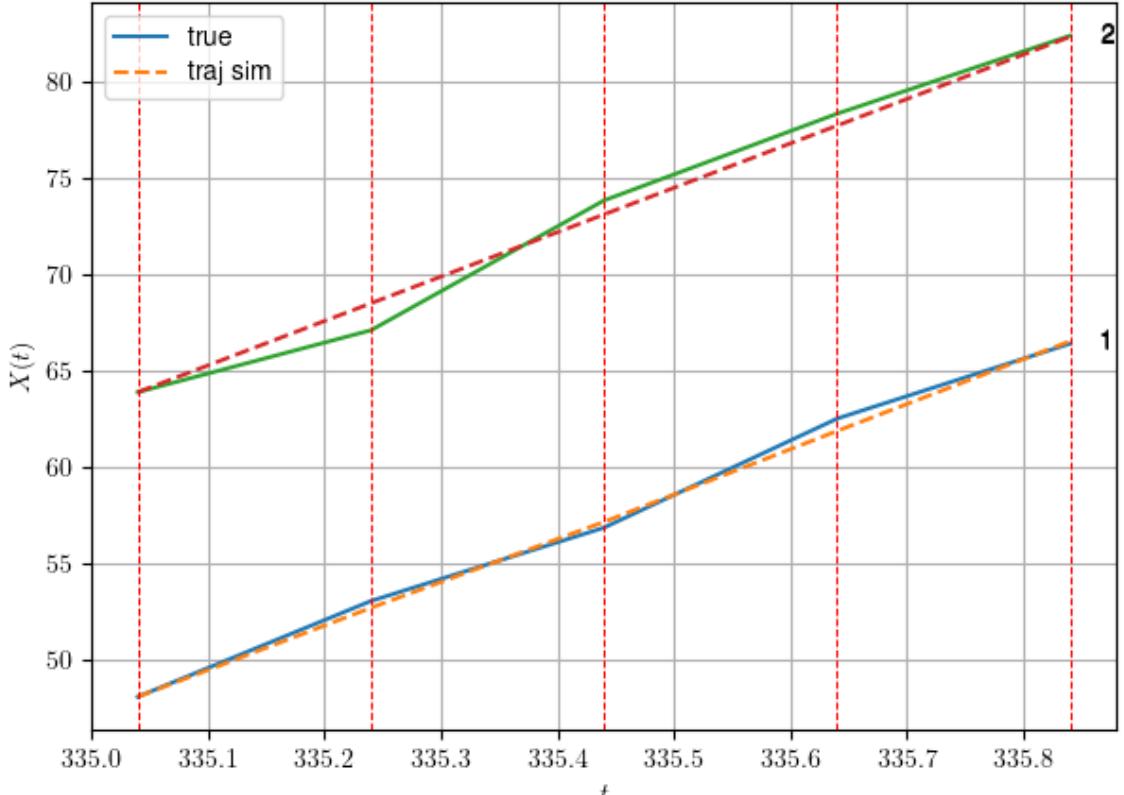
- Time interval n.3: [335.64, 335.84]
  - \* y\_true: [19.46158621]

```
* v_ann: [23.319631576538086, 23.061271780933527]
```

---

```
* err= 0.351462937322815
* Learning rate NN = 2.3914839403005317e-05
* diff = 0.00010088537717495294
```

*df n. 8 – Scene n. 28, at it = 500*



For scene 28/79

```
* use LR_NN=5e-05 with err=5.540610218133084 at it=24
* v0_scn_mean = 23.338820909642994
* MAE = 0.34259597757782123
```

---



---

df n.8, scene n.29/79

---



---



---



---

We have 14 time intervals inside [366.64, 369.44]

- Time interval n.0: [366.64, 366.84]
  - \* y\_true: [17.86619918]
  - \* v\_ann: [7.093236923217773, 18.211190440756237]

---

- Time interval n.1: [366.84, 367.04]
  - \* y\_true: [7.2501536]
  - \* v\_ann: [7.882422924041748, 18.211190440756237]

---

- Time interval n.2: [367.04, 367.24]

```
* y_true: [7.20516912]
* v_ann: [7.251804828643799, 18.211190440756237]
```

```
- Time interval n.3: [367.24, 367.44]
* y_true: [7.17517947]
* v_ann: [7.478248596191406, 18.211190440756237]
```

```
- Time interval n.4: [367.44, 367.64]
* y_true: [5.45014474]
* v_ann: [7.694406509399414, 18.211190440756237]
```

```
- Time interval n.5: [367.64, 367.84]
* y_true: [4.30012159]
* v_ann: [7.991791725158691, 18.211190440756237]
```

```
- Time interval n.6: [367.84, 368.04]
* y_true: [5.08015369]
* v_ann: [8.101547241210938, 18.211190440756237]
```

```
- Time interval n.7: [368.04, 368.24]
* y_true: [5.6001751]
* v_ann: [8.156386375427246, 18.211190440756237]
```

```
- Time interval n.8: [368.24, 368.44]
* y_true: [6.48521995]
* v_ann: [8.252997398376465, 18.211190440756237]
```

```
- Time interval n.9: [368.44, 368.64]
* y_true: [7.07524984]
* v_ann: [8.393622398376465, 18.211190440756237]
```

```
- Time interval n.10: [368.64, 368.84]
* y_true: [8.15531695]
* v_ann: [8.574341773986816, 18.211190440756237]
```

```
- Time interval n.11: [368.84, 369.04]
* y_true: [8.87536169]
* v_ann: [8.821209907531738, 18.211190440756237]
```

```
- Time interval n.12: [369.04, 369.24]
```

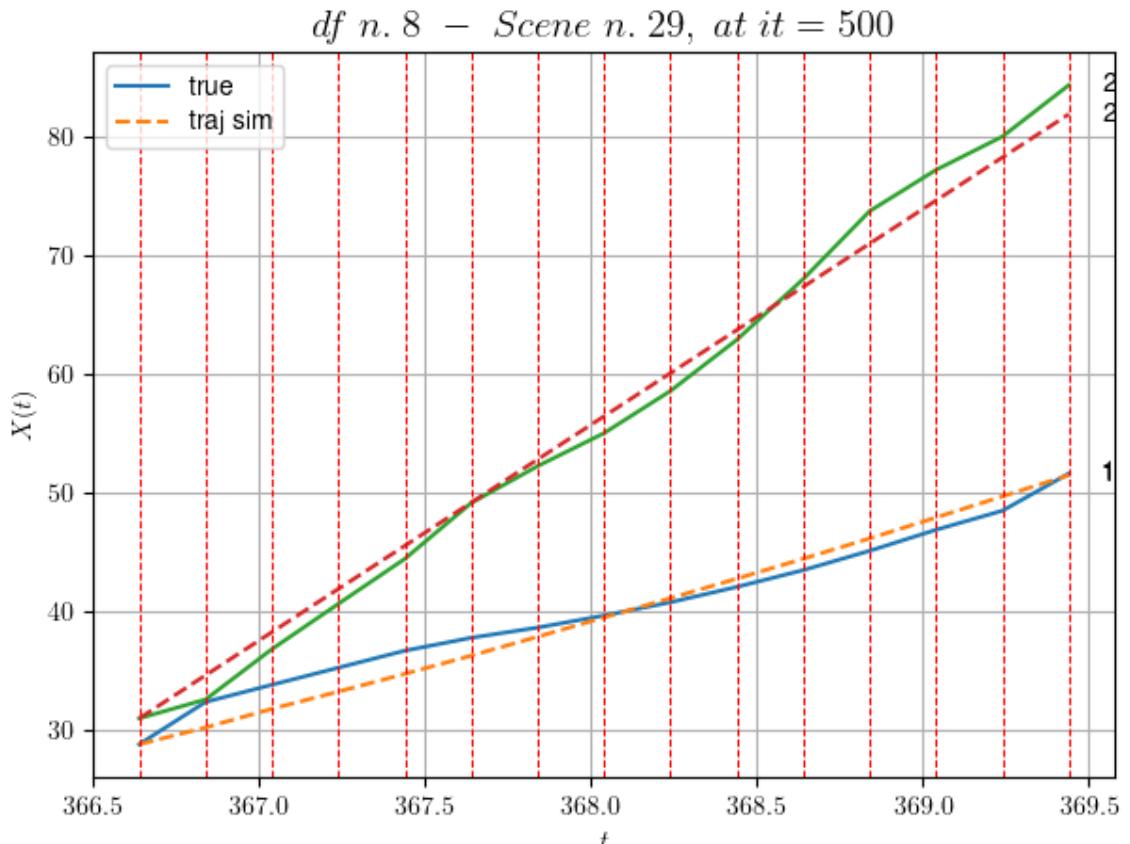
```
* y_true: [8.05829994]
* v_ann: [8.94294548034668, 18.211190440756237]
```

---

```
- Time interval n.13: [369.24, 369.44]
* y_true: [15.69072344]
* v_ann: [8.921382904052734, 18.211190440756237]
```

---

```
* err= 2.0941975027317845
* Learning rate NN = 5.8149696997134015e-05
* diff = 0.013238911502322814
```



For scene 29/79

```
* use LR_NN=0.001 with err=185.9036363808152 at it=24
* v0_scn_mean = 18.682742823035806
* MAE = 1.9972698803841045
```

---



---

df n.8, scene n.30/79

---



---

```
We have 9 time intervals inside [389.24,391.04]
```

```
- Time interval n.0: [389.24, 389.44]
* y_true: [8.38525844]
* v_ann: [7.082624912261963, 19.019765770329105]
```

```
- Time interval n.1: [389.44, 389.64]
 * y_true: [9.22528905]
 * v_ann: [7.16471529006958, 19.019765770329105]

- Time interval n.2: [389.64, 389.84]
 * y_true: [6.14521269]
 * v_ann: [7.2076616287231445, 19.019765770329105]

- Time interval n.3: [389.84, 390.04]
 * y_true: [5.3751936]
 * v_ann: [7.2784528732299805, 19.019765770329105]

- Time interval n.4: [390.04, 390.24]
 * y_true: [6.37525125]
 * v_ann: [7.392139434814453, 19.019765770329105]

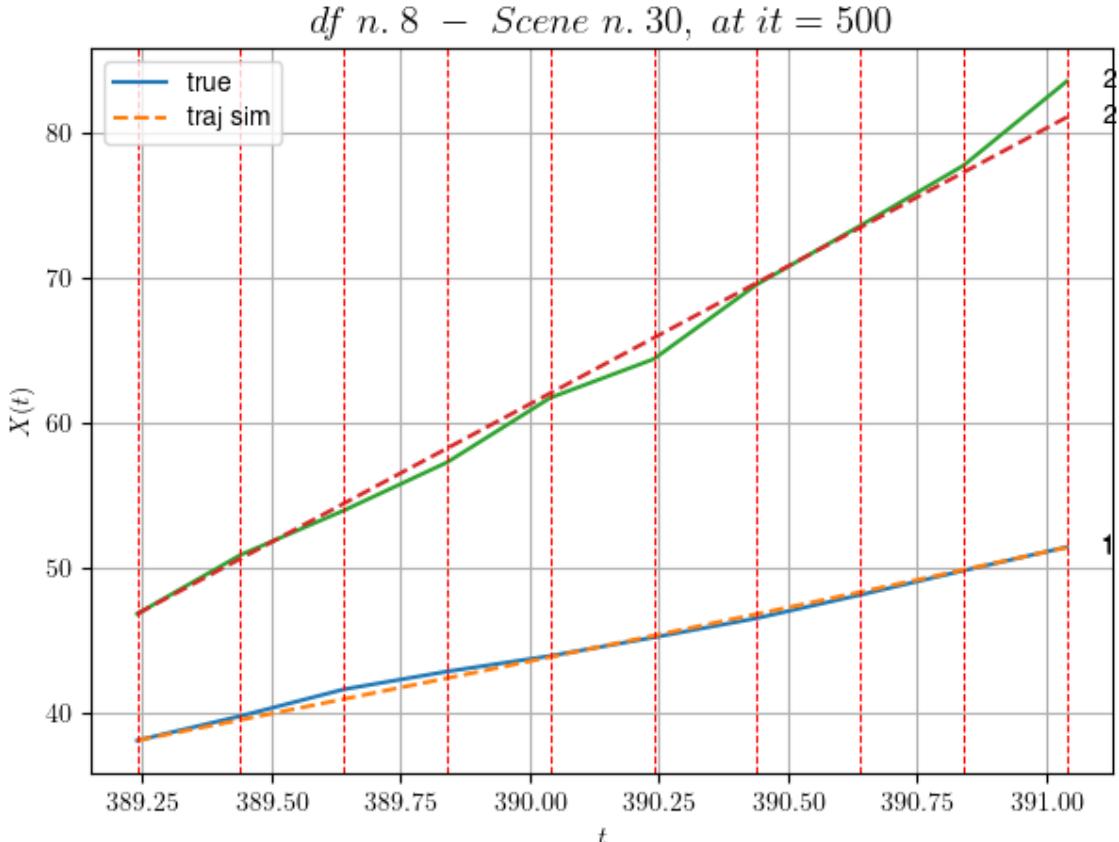
- Time interval n.5: [390.24, 390.44]
 * y_true: [6.62526566]
 * v_ann: [7.438274383544922, 19.019765770329105]

- Time interval n.6: [390.44, 390.64]
 * y_true: [8.02535814]
 * v_ann: [7.567293643951416, 19.019765770329105]

- Time interval n.7: [390.64, 390.84]
 * y_true: [8.37538127]
 * v_ann: [7.651248455047607, 19.019765770329105]

- Time interval n.8: [390.84, 391.04]
 * y_true: [8.11541027]
 * v_ann: [7.737480640411377, 19.019765770329105]

* err= 0.5372510250918043
* Learning rate NN = 1.667717356212961e-06
* diff = 1.2684073464219736e-05
```



For scene 30/79

- \* use LR\_NN=1e-05 with err=67.42246366787676 at it=24
- \* v0\_scn\_mean = 19.458975139433267
- \* MAE = 0.5025223554072474

---



---

df n.8, scene n.31/79

---



---

We have 2 time intervals inside [397.24, 397.64]

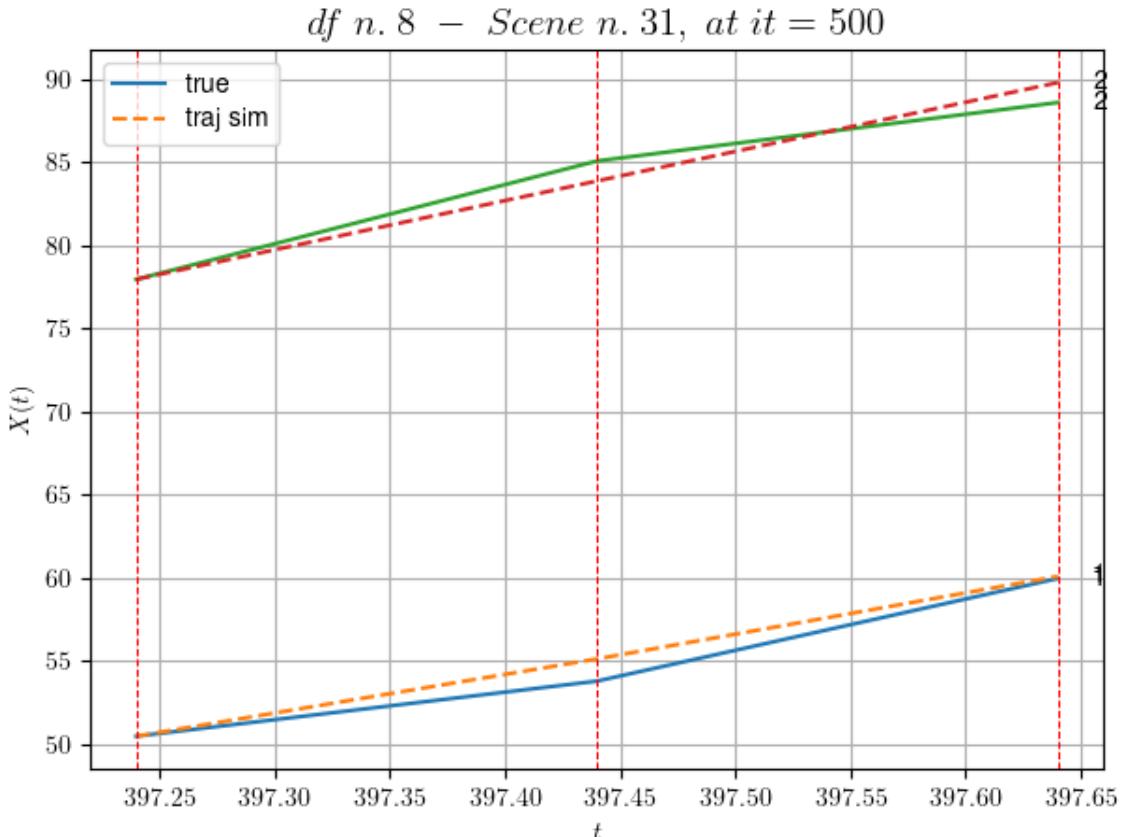
- Time interval n.0: [397.24, 397.44]
  - \* y\_true: [16.60087318]
  - \* v\_ann: [23.27663803100586, 29.63720851630703]

---

- Time interval n.1: [397.44, 397.64]
  - \* y\_true: [30.91194424]
  - \* v\_ann: [24.872529983520508, 29.63720851630703]

---

- \* err= 0.7825823736297981
- \* Learning rate NN = 3.6449993785936385e-05
- \* diff = 0.0007807849149040758



For scene 31/79

- \* use LR\_NN=5e-05 with err=0.8061795148646982 at it=24
- \* v0\_scn\_mean = 29.65172017565272
- \* MAE = 0.7375873676679616

---



---

df n.8, scene n.32/79

---



---

We have 3 time intervals inside [404.84, 405.44]

- Time interval n.0: [404.84, 405.04]
  - \* y\_true: [1.47503232]
  - \* v\_ann: [8.947345733642578, 27.902766852719747]

---

- Time interval n.1: [405.04, 405.24]
  - \* y\_true: [8.01795896]
  - \* v\_ann: [9.269584655761719, 27.902766852719747]

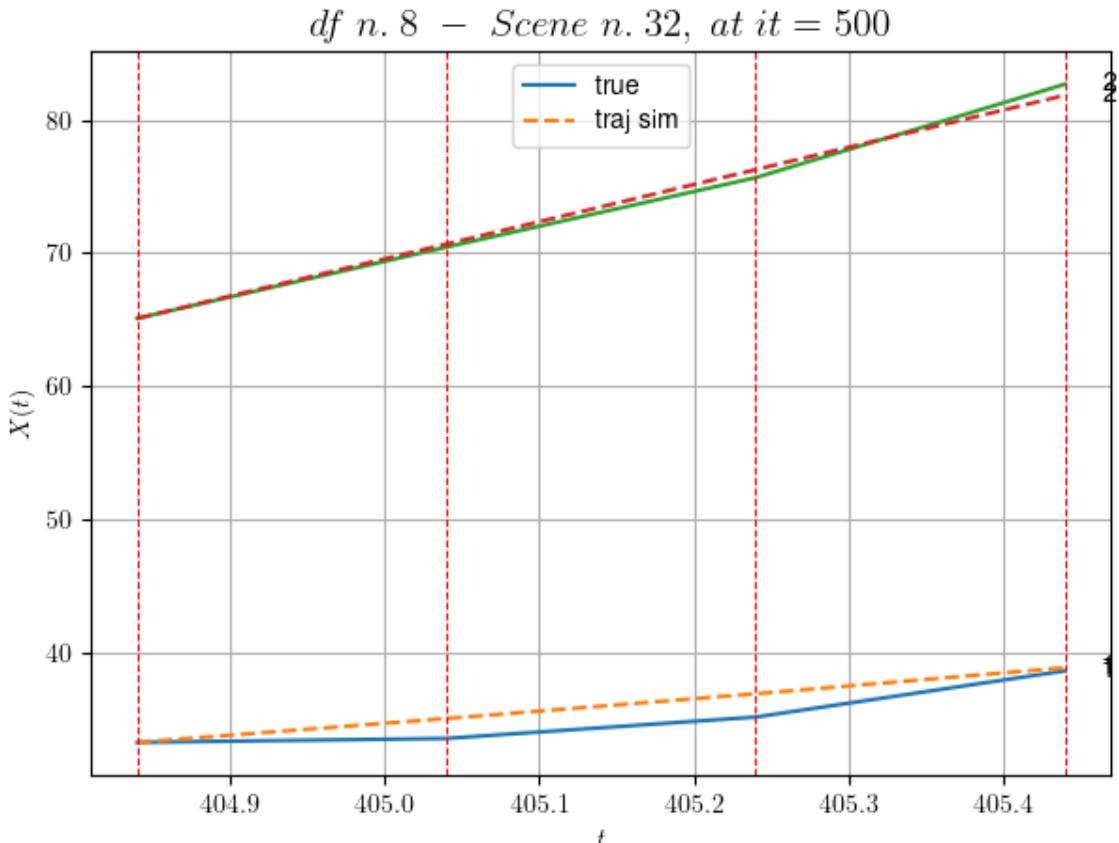
---

- Time interval n.2: [405.24, 405.44]
  - \* y\_true: [17.33045096]
  - \* v\_ann: [9.799431800842285, 27.902766852719747]

---

- \* err= 0.8046119236303022
- \* Learning rate NN = 5.904899080633186e-05

\* diff = 0.0006220406321315597



For scene 32/79

- \* use LR\_NN=0.0001 with err=1.0112866801795655 at it=24
- \* v0\_scn\_mean = 27.98665617859248
- \* MAE = 0.7980965129396993

---



---

df n.8, scene n.33/79

---



---

We have 10 time intervals inside [412.04, 414.04]

- Time interval n.0: [412.04, 412.24]
  - \* y\_true: [24.0804594]
  - \* v\_ann: [20.949520111083984, 22.87186624520211]

---

- Time interval n.1: [412.24, 412.44]
  - \* y\_true: [27.74068623]
  - \* v\_ann: [22.65033721923828, 22.87186624520211]

---

- Time interval n.2: [412.44, 412.64]
  - \* y\_true: [22.39072047]
  - \* v\_ann: [24.358930587768555, 22.87186624520211]

---

- Time interval n.3: [412.64, 412.84]

```
* y_true: [22.94091554]
* v_ann: [22.85186004638672, 22.87186624520211]

- Time interval n.4: [412.84, 413.04]
* y_true: [17.47081843]
* v_ann: [17.644840240478516, 22.87186624520211]

- Time interval n.5: [413.04, 413.24]
* y_true: [23.28131854]
* v_ann: [23.46262550354004, 22.87186624520211]

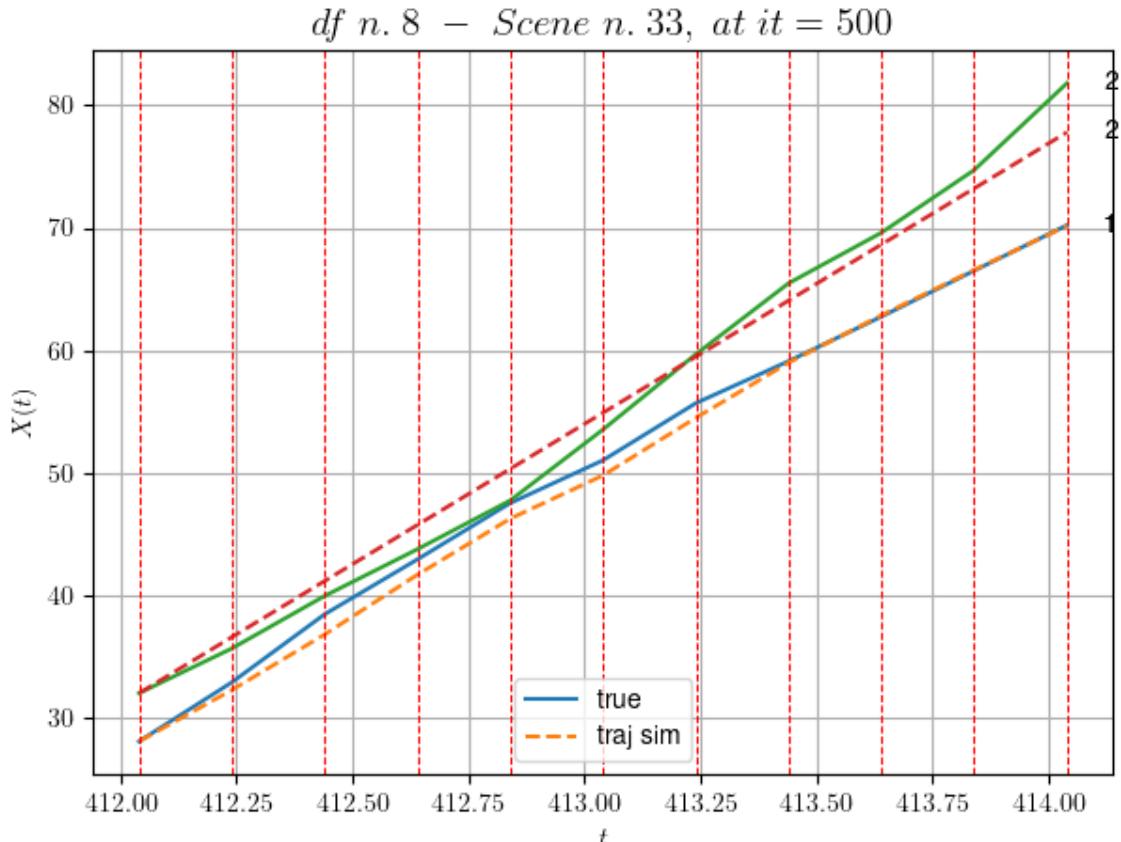
- Time interval n.6: [413.24, 413.44]
* y_true: [17.13105881]
* v_ann: [22.477598190307617, 22.87186624520211]

- Time interval n.7: [413.44, 413.64]
* y_true: [18.16133526]
* v_ann: [19.36435890197754, 22.87186624520211]

- Time interval n.8: [413.64, 413.84]
* y_true: [18.74149771]
* v_ann: [18.478328704833984, 22.87186624520211]

- Time interval n.9: [413.84, 414.04]
* y_true: [18.54169049]
* v_ann: [17.986583709716797, 22.87186624520211]

* err= 2.0584939779207954
* Learning rate NN = 0.0006754255155101418
* diff = 0.03837572981554693
```



For scene 33/79

- \* use LR\_NN=0.005 with err=33.176050558534975 at it=24
- \* v0\_scn\_mean = 23.15699159534017
- \* MAE = 2.0584939779207954

---



---

df n.8, scene n.34/79

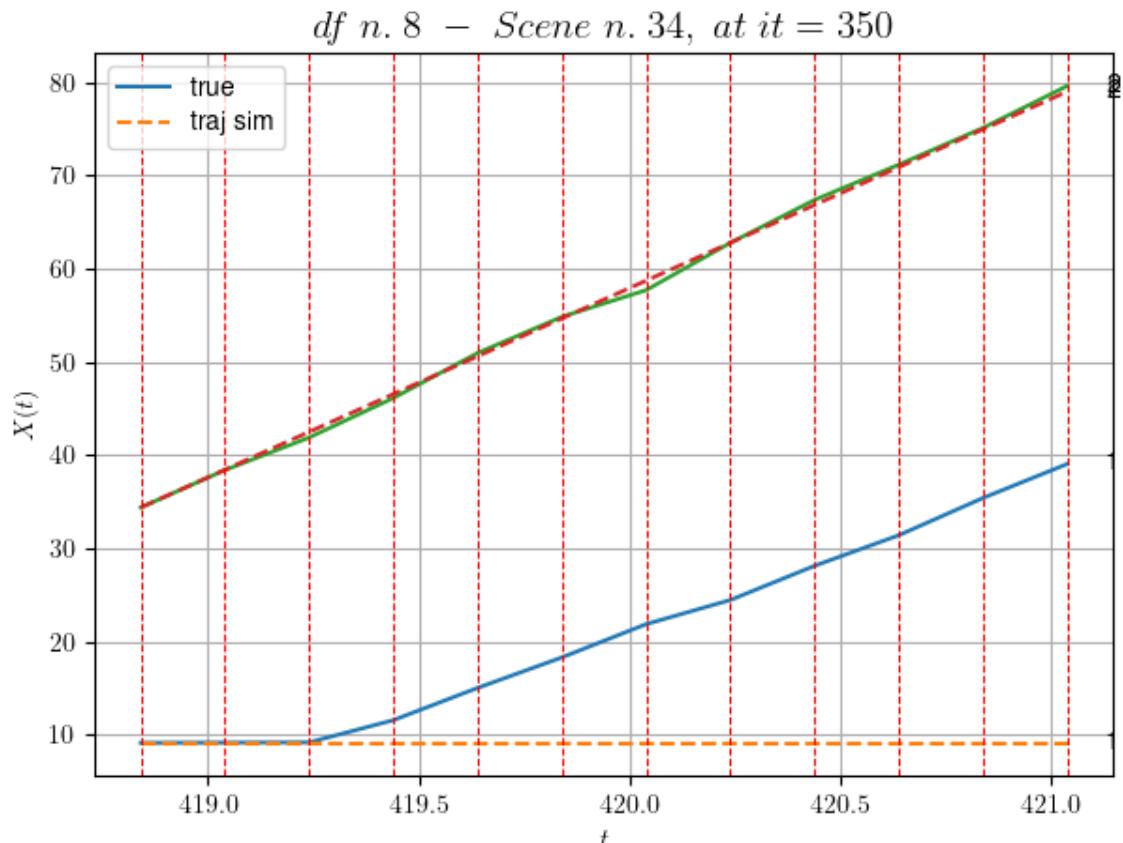
---



---

We have 11 time intervals inside [418.84, 421.04]

- \* err= 123.65852492221967
- \* Learning rate NN = 0.00010294552339473739
- \* diff = 2.647223027452128e-07



For scene 34/79

- \* use LR\_NN=0.0005 with err=79.10630590462596 at it=24
  - \* v0\_scn\_mean = 20.844550792459934
  - \* MAE = 123.6524709197284
- 
- 

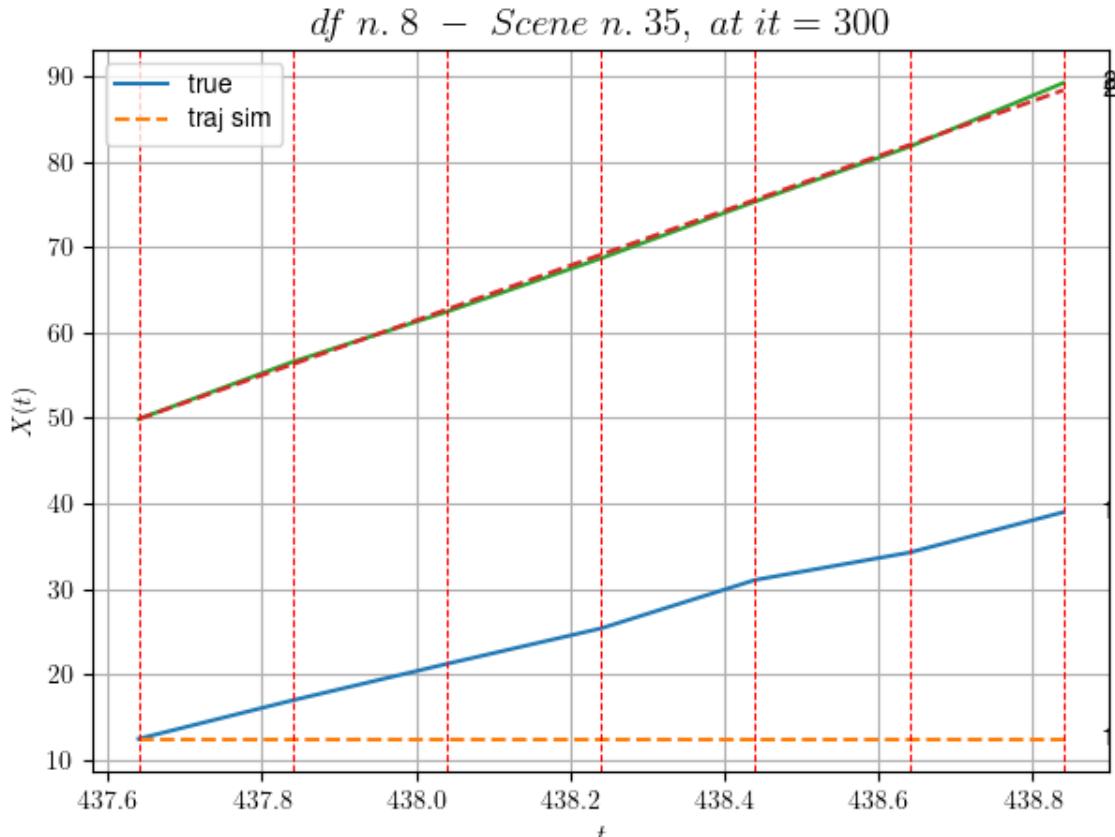
df n.8, scene n.35/79

---

---

We have 6 time intervals inside [437.64, 438.84]

- \* err= 127.79138982817814
- \* Learning rate NN = 2.3914839403005317e-05
- \* diff = 2.3517000613537675e-07



For scene 35/79

- \* use LR\_NN=5e-05 with err=1.6976761385169281 at it=24
- \* v0\_scn\_mean = 31.93531233020835
- \* MAE = 127.79138982817814

---



---

df n.8, scene n.36/79

---



---

We have 14 time intervals inside [445.44, 448.24]

- Time interval n.0: [445.44, 445.64]
  - \* y\_true: [0.12387653]
  - \* v\_ann: [11.09518051147461, 21.04037373587051]

---

- Time interval n.1: [445.64, 445.84]
  - \* y\_true: [0.12387653]
  - \* v\_ann: [13.774641990661621, 21.04037373587051]

---

- Time interval n.2: [445.84, 446.04]
  - \* y\_true: [12.34322315]
  - \* v\_ann: [16.13703727722168, 21.04037373587051]

---

- Time interval n.3: [446.04, 446.24]
  - \* y\_true: [20.41012141]

\* v\_ann: [17.064239501953125, 21.04037373587051]

- Time interval n.4: [446.24, 446.44]  
\* y\_true: [18.79015888]  
\* v\_ann: [17.286531448364258, 21.04037373587051]

- Time interval n.5: [446.44, 446.64]  
\* y\_true: [18.20022789]  
\* v\_ann: [17.86263084411621, 21.04037373587051]

- Time interval n.6: [446.64, 446.84]  
\* y\_true: [23.54038381]  
\* v\_ann: [17.879560470581055, 21.04037373587051]

- Time interval n.7: [446.84, 447.04]  
\* y\_true: [19.83041926]  
\* v\_ann: [18.92949676513672, 21.04037373587051]

- Time interval n.8: [447.04, 447.24]  
\* y\_true: [16.99045407]  
\* v\_ann: [18.848512649536133, 21.04037373587051]

- Time interval n.9: [447.24, 447.44]  
\* y\_true: [22.71075598]  
\* v\_ann: [18.522218704223633, 21.04037373587051]

- Time interval n.10: [447.44, 447.64]  
\* y\_true: [24.90098912]  
\* v\_ann: [20.03082847595215, 21.04037373587051]

- Time interval n.11: [447.64, 447.84]  
\* y\_true: [20.22098889]  
\* v\_ann: [19.76114845275879, 21.04037373587051]

- Time interval n.12: [447.84, 448.04]  
\* y\_true: [19.88112158]  
\* v\_ann: [19.572120666503906, 21.04037373587051]

- Time interval n.13: [448.04, 448.24]  
\* y\_true: [19.97131804]

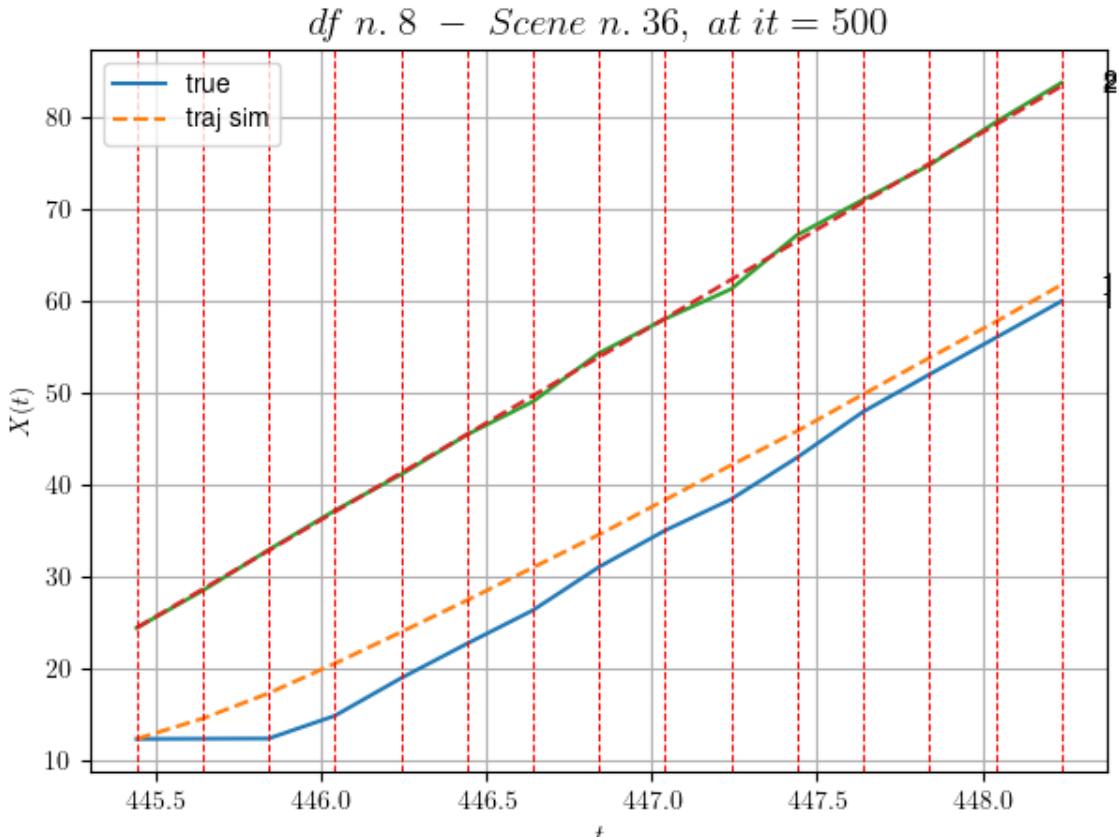
```
* v_ann: [20.16075325012207, 21.04037373587051]
```

---



---

```
* err= 6.373033064231196
* Learning rate NN = 5.8149696997134015e-05
* diff = 0.2022011266770286
```



For scene 36/79

```
* use LR_NN=0.001 with err=108.95180819241888 at it=24
* v0_scn_mean = 21.398758786367104
* MAE = 1.1728946305926558
```

---



---



---

df n.8, scene n.37/79

---



---



---

We have 3 time intervals inside [453.64, 454.24]

- Time interval n.0: [453.64, 453.84]
  - \* y\_true: [28.34103701]
  - \* v\_ann: [35.248775482177734, 27.92010328442668]

---

- Time interval n.1: [453.84, 454.04]

- \* y\_true: [30.17138066]
  - \* v\_ann: [25.6890869140625, 27.92010328442668]

---

- Time interval n.2: [454.04, 454.24]

- \* y\_true: [34.68214182]

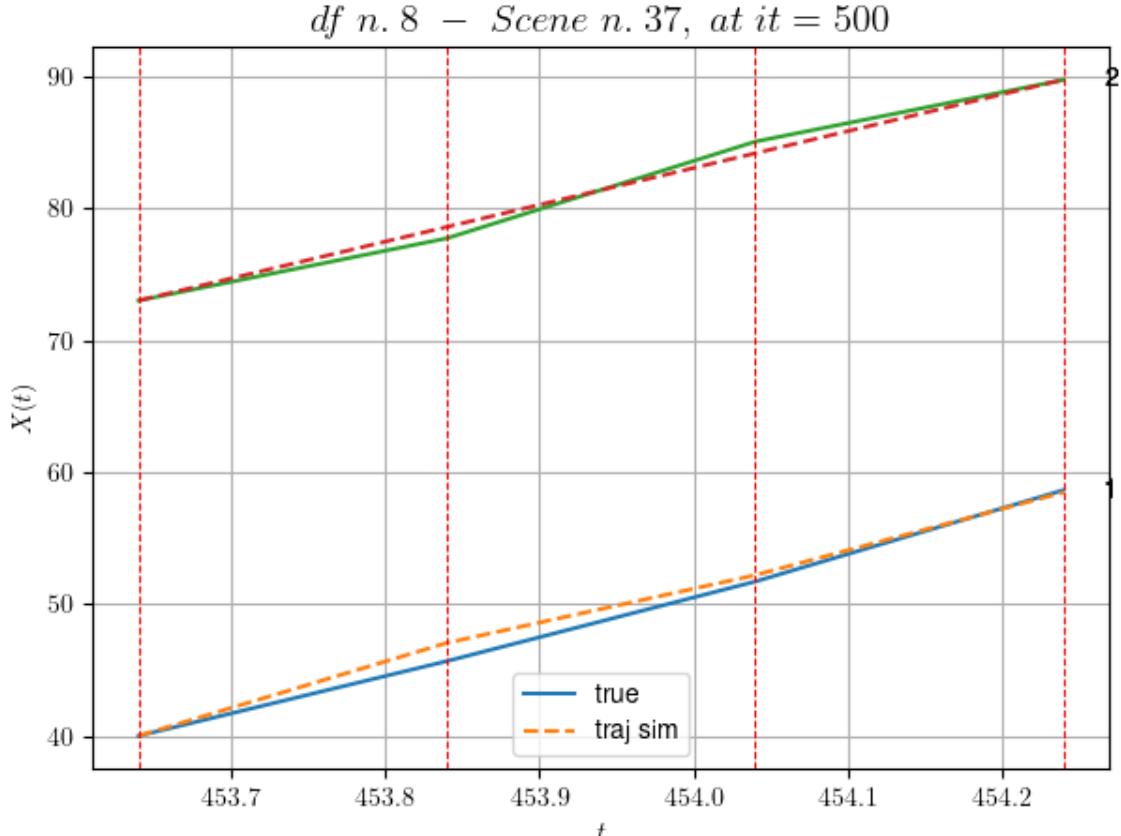
```
* v_ann: [31.375059127807617, 27.92010328442668]
```

---



---

```
* err= 0.4626916448110808
* Learning rate NN = 0.0002952449722215533
* diff = 4.118299858968388e-06
```



For scene 37/79

```
* use LR_NN=0.0005 with err=0.5304895418429757 at it=24
* v0_scn_mean = 28.00329915303398
* MAE = 0.31318950111734933
```

---



---



---

df n.8, scene n.38/79

---



---



---

We have 4 time intervals inside [456.44, 457.24]

- Time interval n.0: [456.44, 456.64]
  - \* y\_true: [23.84053136]
  - \* v\_ann: [26.35660743713379, 22.637249688333664]

---

- Time interval n.1: [456.64, 456.84]
  - \* y\_true: [24.61071928]
  - \* v\_ann: [24.196529388427734, 22.637249688333664]

---

- Time interval n.2: [456.84, 457.04]

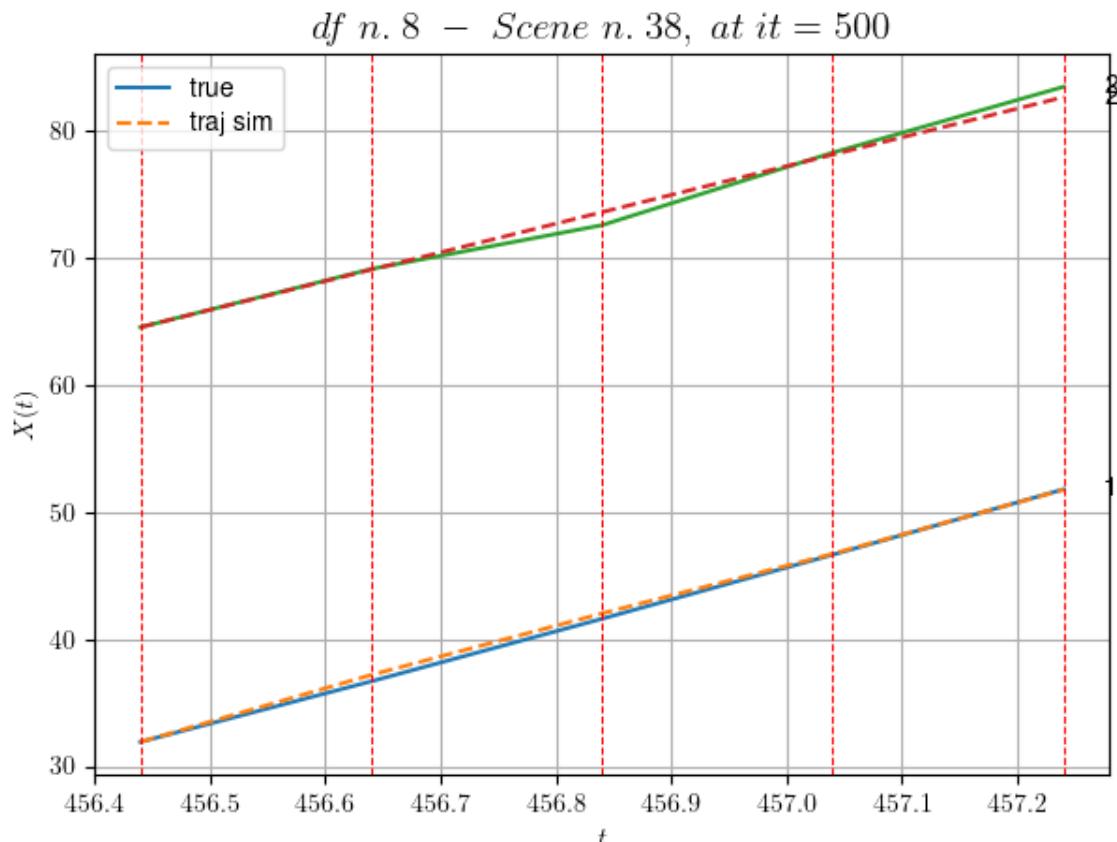
```
* y_true: [25.2209288]
* v_ann: [23.48339080810547, 22.637249688333664]
```

---

```
- Time interval n.3: [457.04, 457.24]
* y_true: [25.74119407]
* v_ann: [25.19847869873047, 22.637249688333664]
```

---

```
* err= 0.21732256978407477
* Learning rate NN = 0.000239148415857926
* diff = 6.388756163988596e-06
```



For scene 38/79

```
* use LR_NN=0.0005 with err=6.195898444078232 at it=24
* v0_scn_mean = 22.931759700743992
* MAE = 0.18969340798511602
```

---



---

df n.8, scene n.39/79

---



---



---



---

We have 8 time intervals inside [458.64, 460.24]

```
- Time interval n.0: [458.64, 458.84]
* y_true: [25.95045298]
* v_ann: [23.81562614440918, 22.18478544849878]
```

```
- Time interval n.1: [458.84, 459.04]
 * y_true: [22.25052189]
 * v_ann: [23.153316497802734, 22.18478544849878]

- Time interval n.2: [459.04, 459.24]
 * y_true: [20.55060692]
 * v_ann: [23.48847007751465, 22.18478544849878]

- Time interval n.3: [459.24, 459.44]
 * y_true: [13.40046688]
 * v_ann: [24.220773696899414, 22.18478544849878]

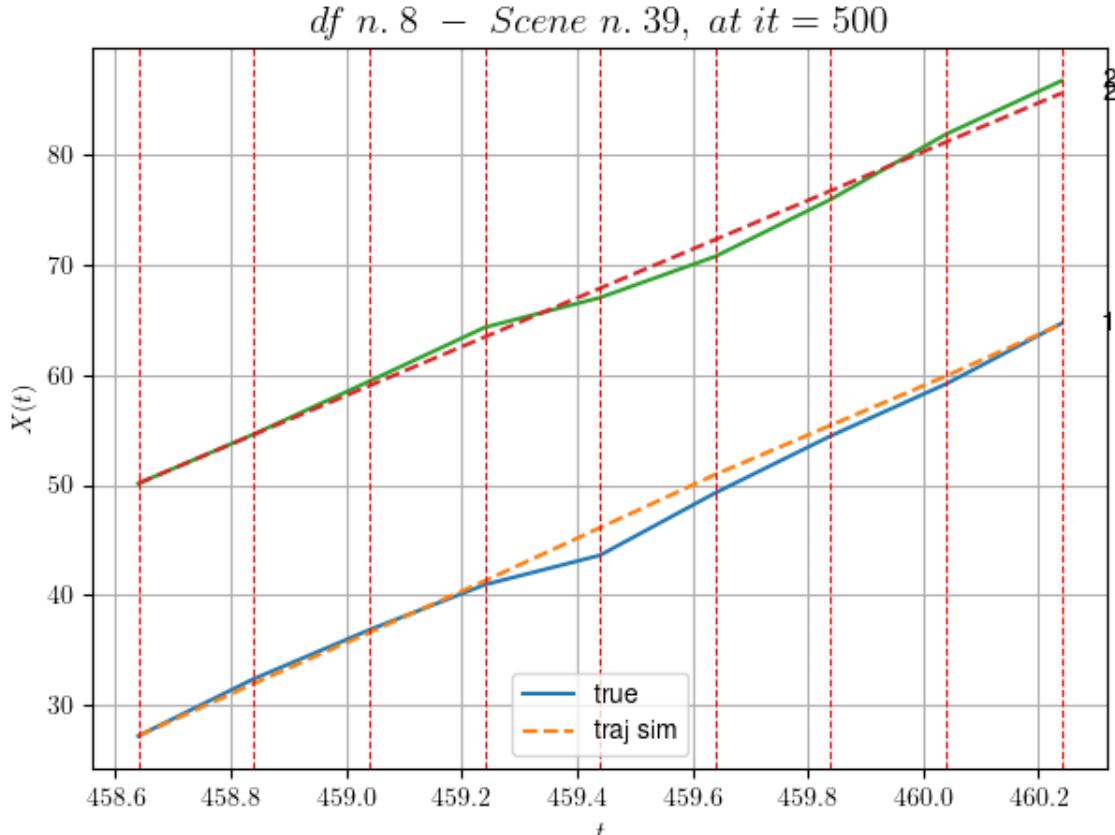
- Time interval n.4: [459.44, 459.64]
 * y_true: [28.40119406]
 * v_ann: [24.196645736694336, 22.18478544849878]

- Time interval n.5: [459.64, 459.84]
 * y_true: [25.90135574]
 * v_ann: [22.405405044555664, 22.18478544849878]

- Time interval n.6: [459.84, 460.04]
 * y_true: [23.6514835]
 * v_ann: [22.42894744873047, 22.18478544849878]

- Time interval n.7: [460.04, 460.24]
 * y_true: [27.5520519]
 * v_ann: [23.562374114990234, 22.18478544849878]

* err= 0.9595150017490279
* Learning rate NN = 2.058910467894748e-06
* diff = 0.001808960629046119
```



For scene 39/79

```
* use LR_NN=1e-05 with err=28.310049786977892 at it=24
* v0_scn_mean = 22.497394030499063
* MAE = 0.9581785217858005
```

---



---

df n.8, scene n.40/79

---



---

We have 15 time intervals inside [475.84, 478.84]

- Time interval n.0: [475.84, 476.04]
  - \* y\_true: [0.12387653]
  - \* v\_ann: [6.304248332977295, 18.58562797515589]

---

- Time interval n.1: [476.04, 476.24]
  - \* y\_true: [0.12387653]
  - \* v\_ann: [8.040810585021973, 18.58562797515589]

---

- Time interval n.2: [476.24, 476.44]
  - \* y\_true: [0.12387653]
  - \* v\_ann: [9.995784759521484, 18.58562797515589]

---

- Time interval n.3: [476.44, 476.64]
  - \* y\_true: [0.35014507]

\* v\_ann: [11.639857292175293, 18.58562797515589]

- Time interval n.4: [476.64, 476.84]  
\* y\_true: [15.34010034]  
\* v\_ann: [12.821980476379395, 18.58562797515589]

- Time interval n.5: [476.84, 477.04]  
\* y\_true: [16.47014538]  
\* v\_ann: [13.432884216308594, 18.58562797515589]

- Time interval n.6: [477.04, 477.24]  
\* y\_true: [15.29017682]  
\* v\_ann: [14.170331954956055, 18.58562797515589]

- Time interval n.7: [477.24, 477.44]  
\* y\_true: [14.20020635]  
\* v\_ann: [14.41200065612793, 18.58562797515589]

- Time interval n.8: [477.44, 477.64]  
\* y\_true: [16.81030766]  
\* v\_ann: [14.778816223144531, 18.58562797515589]

- Time interval n.9: [477.64, 477.84]  
\* y\_true: [18.60041729]  
\* v\_ann: [15.061208724975586, 18.58562797515589]

- Time interval n.10: [477.84, 478.04]  
\* y\_true: [15.74042221]  
\* v\_ann: [15.434197425842285, 18.58562797515589]

- Time interval n.11: [478.04, 478.24]  
\* y\_true: [17.32056356]  
\* v\_ann: [15.956897735595703, 18.58562797515589]

- Time interval n.12: [478.24, 478.44]  
\* y\_true: [22.3908747]  
\* v\_ann: [16.130678176879883, 18.58562797515589]

- Time interval n.13: [478.44, 478.64]  
\* y\_true: [17.17076636]

```
* v_ann: [17.239273071289062, 18.58562797515589]
```

---

```
- Time interval n.14: [478.64, 478.84]
```

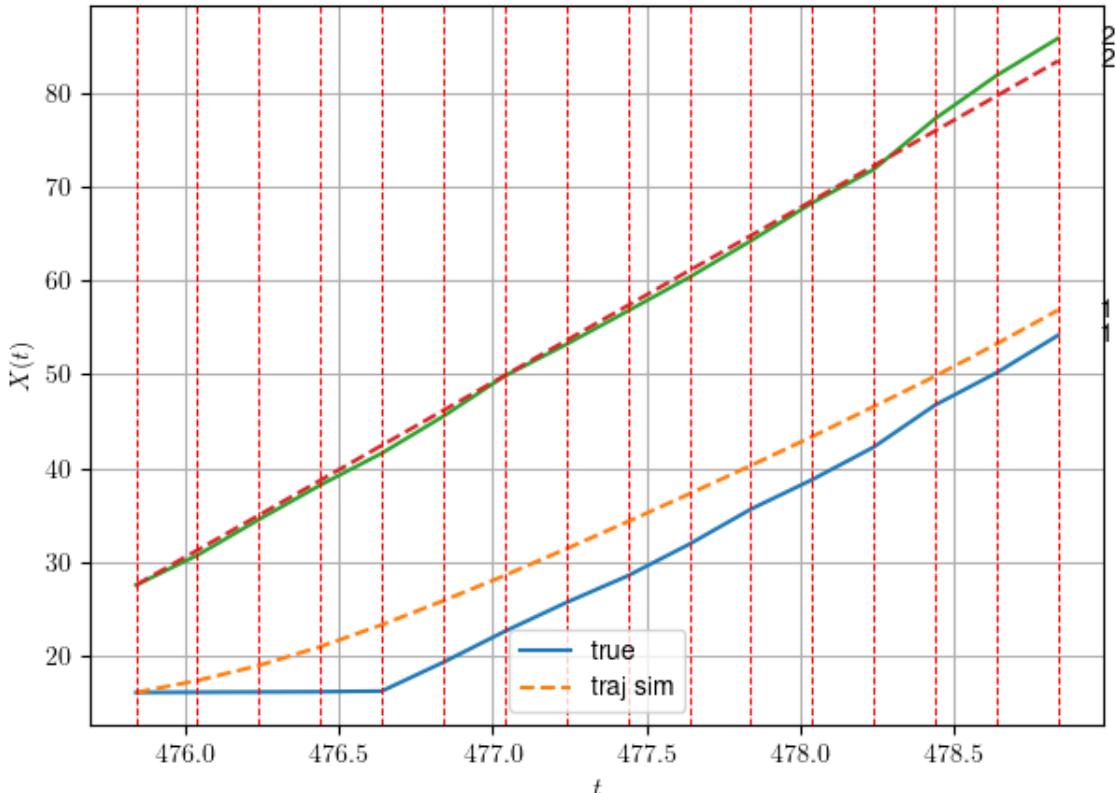
```
* y_true: [19.89107551]
```

```
* v_ann: [17.90435218811035, 18.58562797515589]
```

---

```
* err= 11.173789491441989
* Learning rate NN = 4.7101253585424274e-05
* diff = 0.212710763015561
```

*df n. 8 – Scene n. 40, at it = 500*



For scene 40/79

```
* use LR_NN=0.001 with err=197.51398625859918 at it=24
```

```
* v0_scn_mean = 19.042202856062232
```

```
* MAE = 3.274504580996448
```

---



---



---

df n.8, scene n.41/79

---



---



---



---



---



---

```
We have 9 time intervals inside [488.24,490.04]
```

```
- Time interval n.0: [488.24, 488.44]
```

```
* y_true: [23.74050104]
```

```
* v_ann: [25.274036407470703, 18.510799599163875]
```

---



---



---

```
- Time interval n.1: [488.44, 488.64]
```

```
* y_true: [16.69043259]
```

```
* v_ann: [23.243898391723633, 18.510799599163875]
```

```
- Time interval n.2: [488.64, 488.84]
* y_true: [18.92060399]
* v_ann: [24.08664321899414, 18.510799599163875]
```

```
- Time interval n.3: [488.84, 489.04]
* y_true: [28.4711413]
* v_ann: [23.934465408325195, 18.510799599163875]
```

```
- Time interval n.4: [489.04, 489.24]
* y_true: [20.32096673]
* v_ann: [21.661701202392578, 18.510799599163875]
```

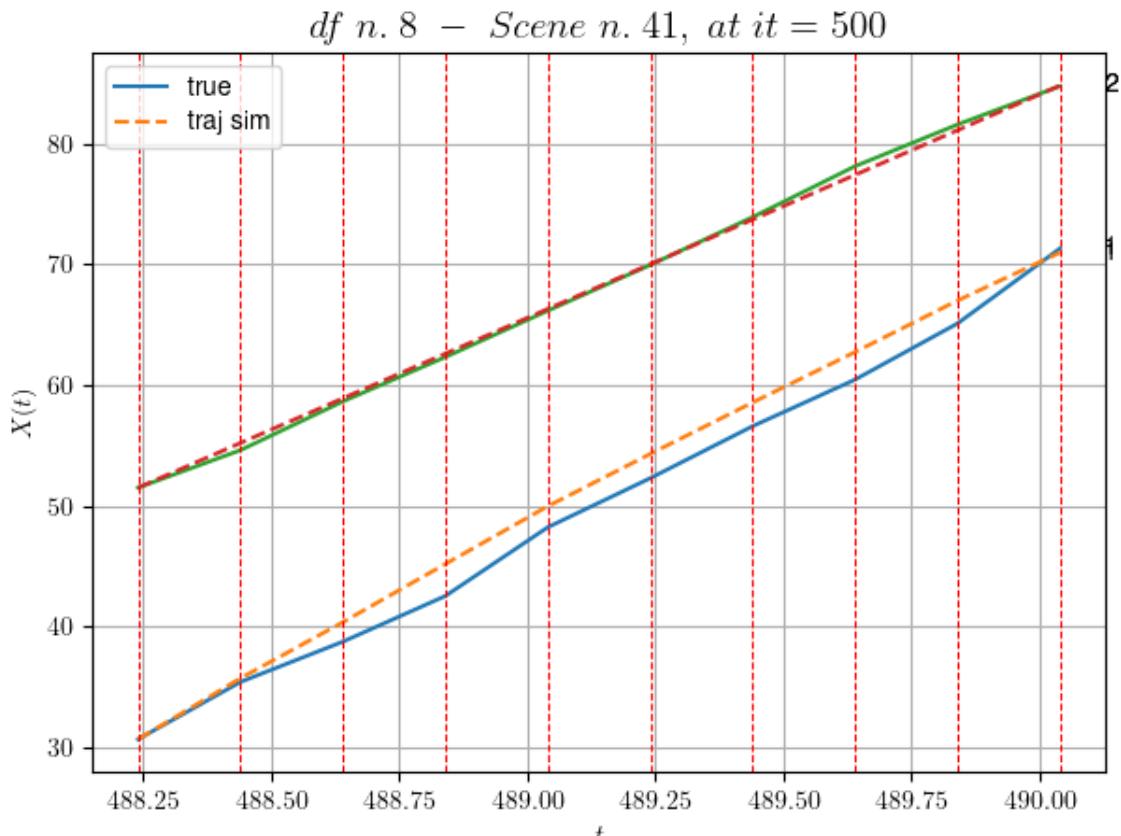
```
- Time interval n.5: [489.24, 489.44]
* y_true: [21.55123159]
* v_ann: [21.317577362060547, 18.510799599163875]
```

```
- Time interval n.6: [489.44, 489.64]
* y_true: [19.30126205]
* v_ann: [20.896038055419922, 18.510799599163875]
```

```
- Time interval n.7: [489.64, 489.84]
* y_true: [23.26176809]
* v_ann: [21.329500198364258, 18.510799599163875]
```

```
- Time interval n.8: [489.84, 490.04]
* y_true: [31.05279265]
* v_ann: [19.85504722595215, 18.510799599163875]
```

```
* err= 1.5460365293726714
* Learning rate NN = 1.667717356212961e-06
* diff = 0.002082775143948057
```



For scene 41/79

\* use LR\_NN=1e-05 with err=74.4209066895866 at it=24  
\* v0\_scn\_mean = 18.97036761510949  
\* MAE = 1.5425520662431937

---

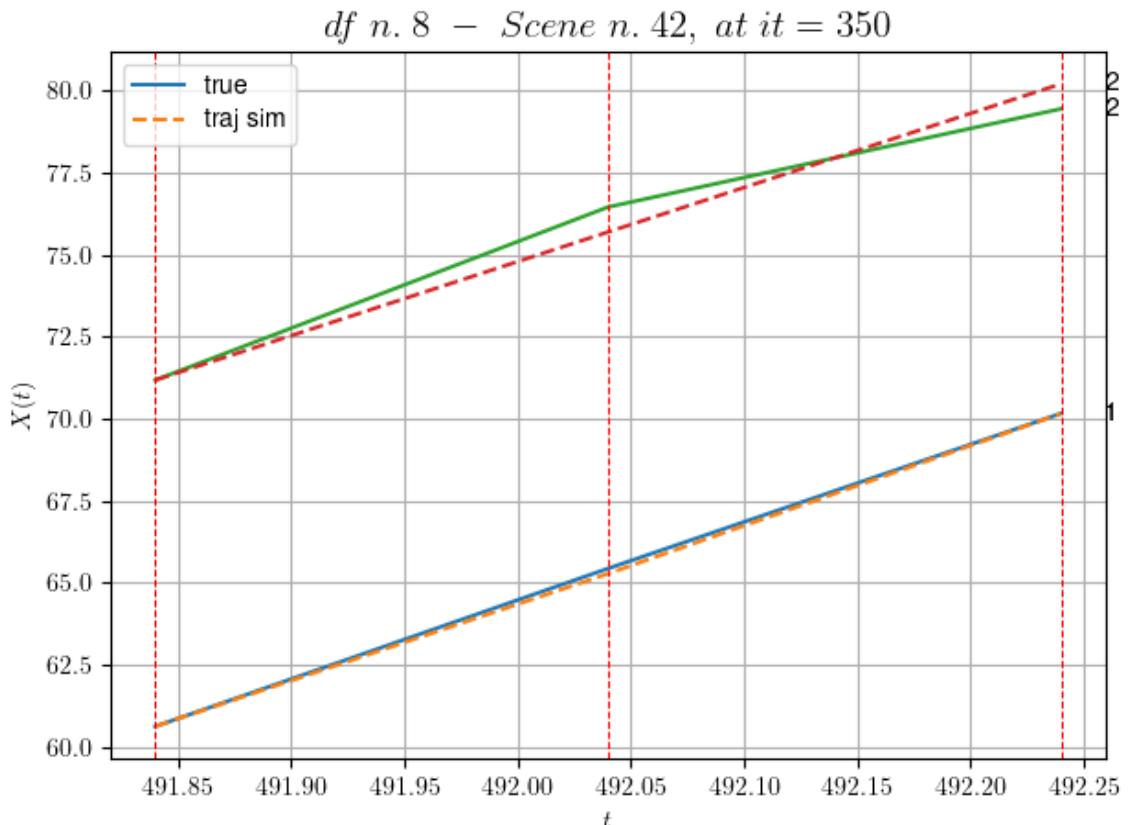
---

df n.8, scene n.42/79

---

---

We have 2 time intervals inside [491.84,492.24]  
\* err= 0.1967825913252586  
\* Learning rate NN = 8.099999104160815e-05  
\* diff = 3.6358779936795926e-07



For scene 42/79

```
* use LR_NN=0.0001 with err=2.424591349627336 at it=24
* v0_scn_mean = 22.977990538361993
* MAE = 0.1967825913252586
```

---

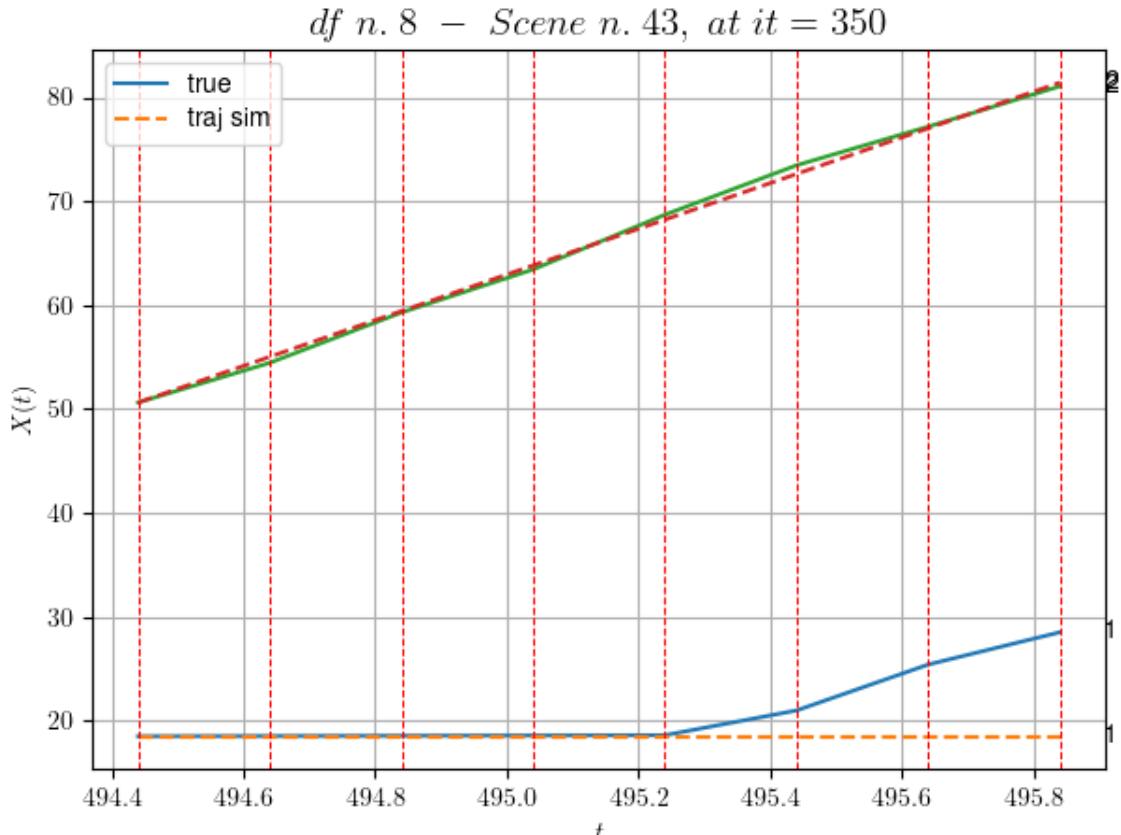
---

df n.8, scene n.43/79

---

---

```
We have 7 time intervals inside [494.44,495.84]
* err= 9.73761252256643
* Learning rate NN = 0.0001937102060765028
* diff = 9.427130365224912e-08
```



For scene 43/79

- \* use LR\_NN=0.0005 with err=24.335796573066727 at it=24
- \* v0\_scn\_mean = 22.465100556836276
- \* MAE = 9.734880139418914

---



---

df n.8, scene n.44/79

---



---

We have 12 time intervals inside [496.44, 498.84]

- Time interval n.0: [496.44, 496.64]
  - \* y\_true: [20.50051219]
  - \* v\_ann: [20.245723724365234, 18.546831523765658]

---

- Time interval n.1: [496.64, 496.84]
  - \* y\_true: [21.20065888]
  - \* v\_ann: [21.10541534423828, 18.546831523765658]

---

- Time interval n.2: [496.84, 497.04]
  - \* y\_true: [18.1506795]
  - \* v\_ann: [21.979555130004883, 18.546831523765658]

---

- Time interval n.3: [497.04, 497.24]
  - \* y\_true: [15.75068343]

\* v\_ann: [21.72235870361328, 18.546831523765658]

- Time interval n.4: [497.24, 497.44]  
\* y\_true: [23.0011677]  
\* v\_ann: [20.614713668823242, 18.546831523765658]

- Time interval n.5: [497.44, 497.64]  
\* y\_true: [22.30133962]  
\* v\_ann: [20.096799850463867, 18.546831523765658]

- Time interval n.6: [497.64, 497.84]  
\* y\_true: [19.25133447]  
\* v\_ann: [21.240543365478516, 18.546831523765658]

- Time interval n.7: [497.84, 498.04]  
\* y\_true: [28.7523245]  
\* v\_ann: [21.608070373535156, 18.546831523765658]

- Time interval n.8: [498.04, 498.24]  
\* y\_true: [20.10187804]  
\* v\_ann: [22.90550422668457, 18.546831523765658]

- Time interval n.9: [498.24, 498.44]  
\* y\_true: [21.80228844]  
\* v\_ann: [23.328067779541016, 18.546831523765658]

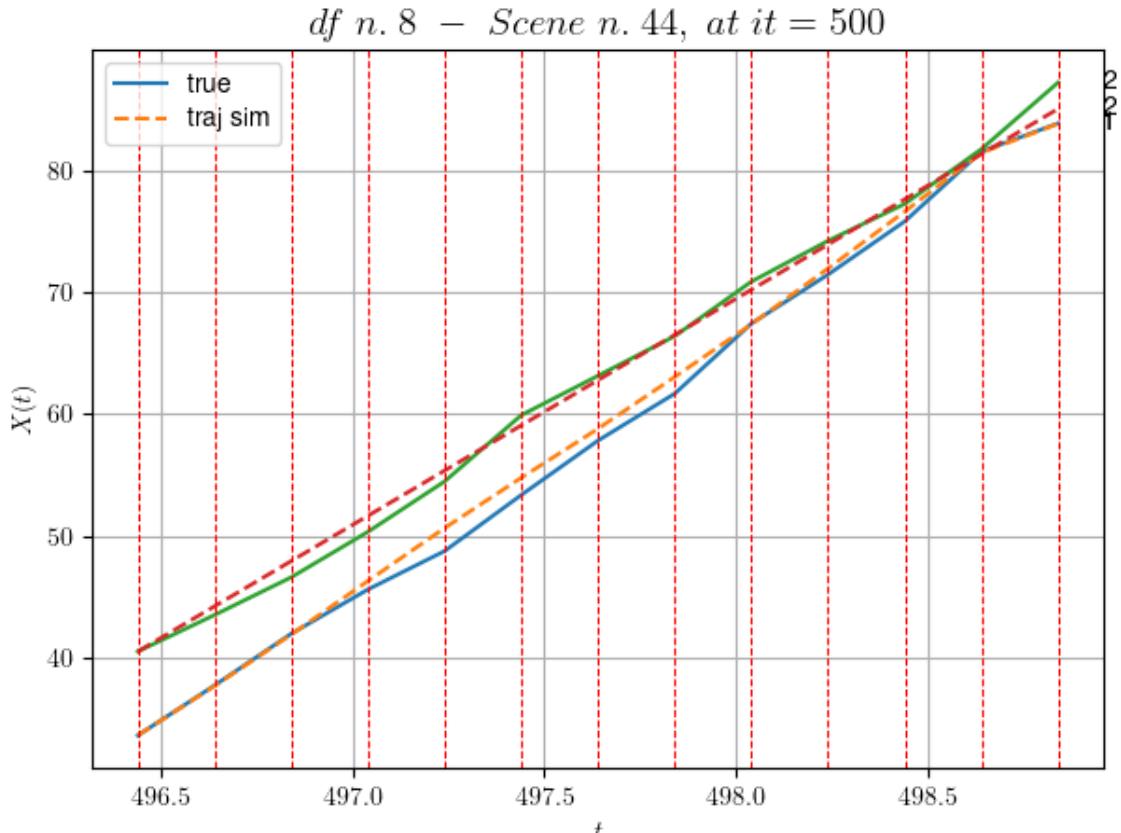
- Time interval n.10: [498.44, 498.64]  
\* y\_true: [28.64345627]  
\* v\_ann: [24.12592887878418, 18.546831523765658]

- Time interval n.11: [498.64, 498.84]  
\* y\_true: [11.56150358]  
\* v\_ann: [11.89377498626709, 18.546831523765658]

\* err= 0.8054036260853383

\* Learning rate NN = 8.862933464115486e-05

\* diff = 0.00722088694286227



For scene 44/79

```
* use LR_NN=0.001 with err=128.17220270214438 at it=24
* v0_scn_mean = 19.00495826272758
* MAE = 0.7984753990642601
```

=====

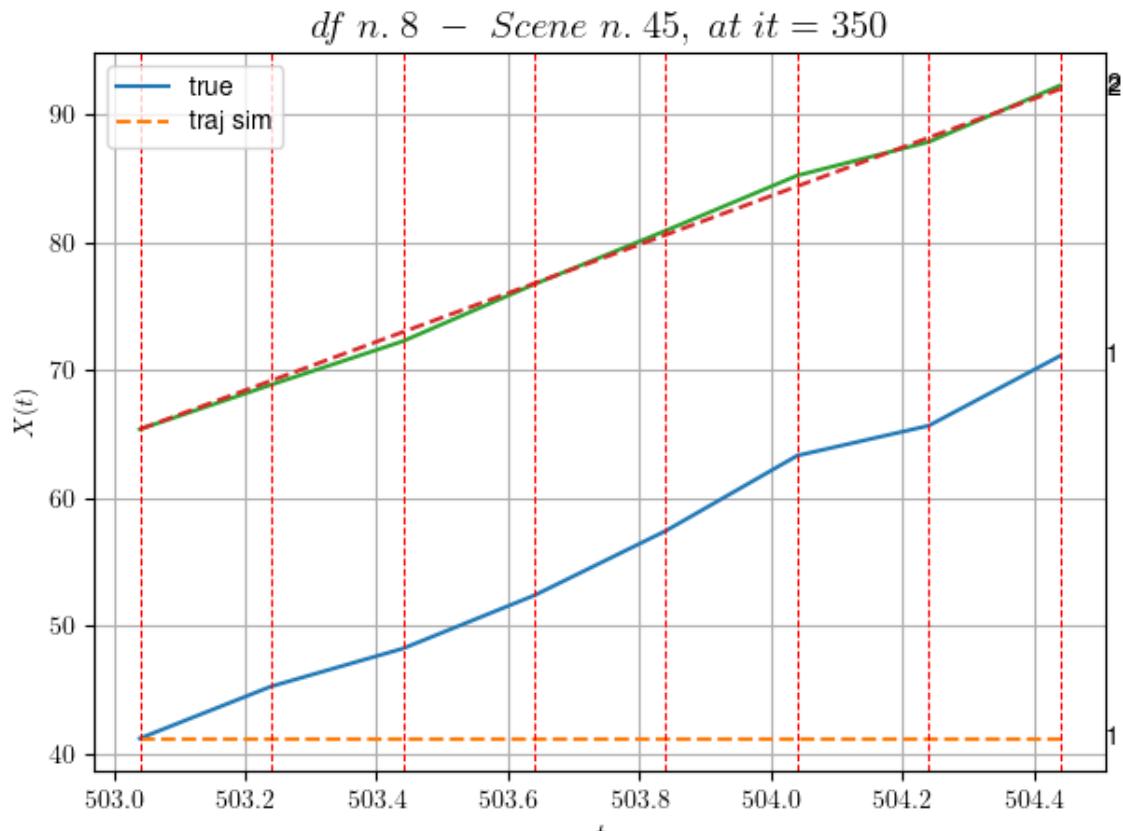
=====

df n.8, scene n.45/79

=====

=====

```
We have 7 time intervals inside [503.04,504.44]
* err= 152.48512753493142
* Learning rate NN = 0.0001937102060765028
* diff = 1.8194884887634544e-07
```

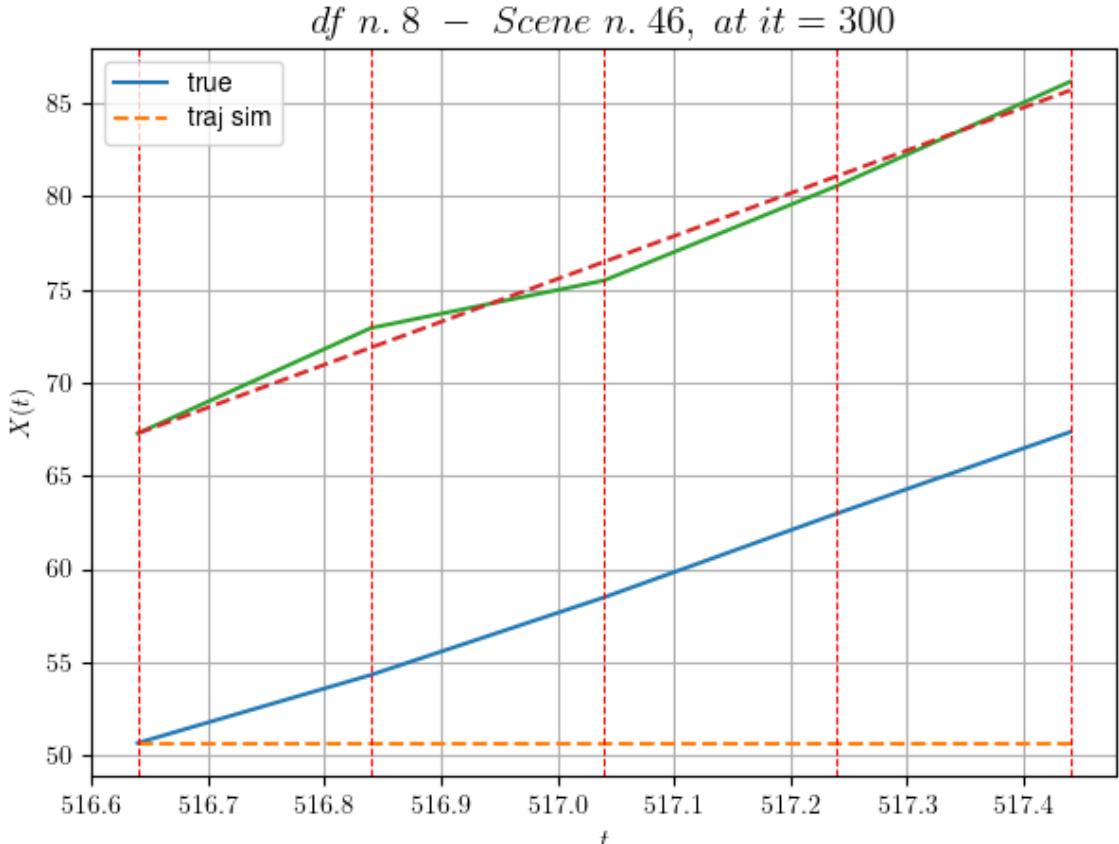


df n.8, scene n.46/79

---

---

We have 4 time intervals inside [516.64,517.44]  
\* err= 50.764654184952455  
\* Learning rate NN = 0.0006560999318026006  
\* diff = 4.358750445021542e-07



For scene 46/79

- \* use LR\_NN=0.001 with err=6.328060428300656 at it=24
- \* v0\_scn\_mean = 23.484832869083828
- \* MAE = 50.764654184952455

---



---

df n.8, scene n.47/79

---



---

We have 6 time intervals inside [519.24, 520.44]

- Time interval n.0: [519.24, 519.44]
  - \* y\_true: [9.41391239]
  - \* v\_ann: [9.48946762084961, 21.673608825679928]

---

- Time interval n.1: [519.44, 519.64]
  - \* y\_true: [9.38810376]
  - \* v\_ann: [9.950237274169922, 21.673608825679928]

---

- Time interval n.2: [519.64, 519.84]
  - \* y\_true: [9.38810376]
  - \* v\_ann: [8.644941329956055, 21.673608825679928]

---

- Time interval n.3: [519.84, 520.04]
  - \* y\_true: [9.38810376]

\* v\_ann: [7.9026641845703125, 21.673608825679928]

---

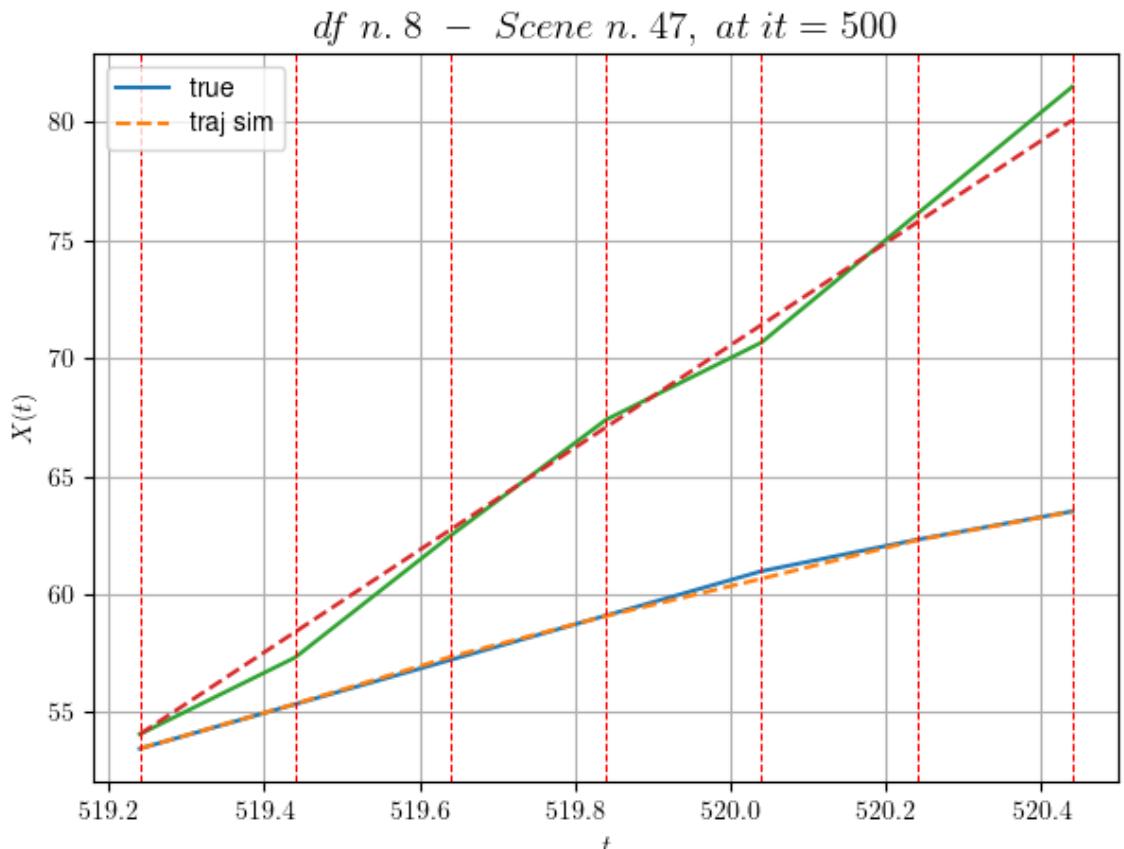
- Time interval n.4: [520.04, 520.24]  
 \* y\_true: [6.67799104]  
 \* v\_ann: [8.169432640075684, 21.673608825679928]

---

- Time interval n.5: [520.24, 520.44]  
 \* y\_true: [6.00046286]  
 \* v\_ann: [6.011629581451416, 21.673608825679928]

---

\* err= 0.29579491390962137  
 \* Learning rate NN = 0.0015690524596720934  
 \* diff = 0.00047499914530713117



For scene 47/79

\* use LR\_NN=0.005 with err=19.481364162239117 at it=24  
 \* v0\_scn\_mean = 22.006664472584326  
 \* MAE = 0.2774905576115729

---



---

df n.8, scene n.48/79

---



---

We have 7 time intervals inside [521.04,522.44]  
 - Time interval n.0: [521.04, 521.24]

```
* y_true: [17.76052146]
* v_ann: [23.96715545654297, 9.856007983845217]

- Time interval n.1: [521.24, 521.44]
* y_true: [21.0507393]
* v_ann: [20.786109924316406, 9.856007983845217]

- Time interval n.2: [521.44, 521.64]
* y_true: [20.2108584]
* v_ann: [19.974964141845703, 9.856007983845217]

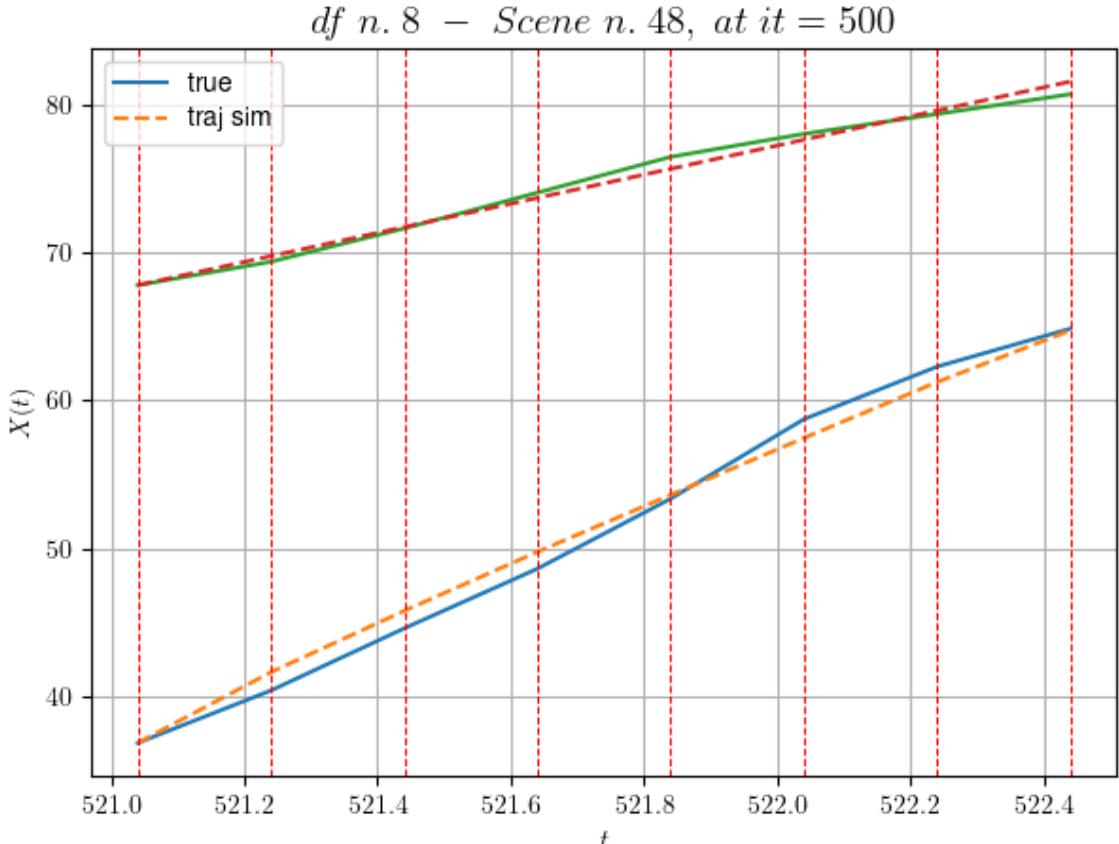
- Time interval n.3: [521.64, 521.84]
* y_true: [23.71121032]
* v_ann: [19.29729461669922, 9.856007983845217]

- Time interval n.4: [521.84, 522.04]
* y_true: [26.93162858]
* v_ann: [19.27382469177246, 9.856007983845217]

- Time interval n.5: [522.04, 522.24]
* y_true: [17.80125378]
* v_ann: [18.938838958740234, 9.856007983845217]

- Time interval n.6: [522.24, 522.44]
* y_true: [12.87102462]
* v_ann: [17.514789581298828, 9.856007983845217]

* err= 0.5583604105979588
* Learning rate NN = 0.00012709324073512107
* diff = 0.0024136993448098387
```



For scene 48/79

- \* use LR\_NN=0.0005 with err=143.56574971133261 at it=24
- \* v0\_scn\_mean = 10.661767664337335
- \* MAE = 0.5453424993603622

---



---

df n.8, scene n.49/79

---



---

We have 9 time intervals inside [529.04, 530.84]

- Time interval n.0: [529.04, 529.24]
  - \* y\_true: [6.80006618]
  - \* v\_ann: [7.200565814971924, 23.14771051445862]

---

- Time interval n.1: [529.24, 529.44]
  - \* y\_true: [7.54008988]
  - \* v\_ann: [8.145159721374512, 23.14771051445862]

---

- Time interval n.2: [529.44, 529.64]
  - \* y\_true: [7.7250958]
  - \* v\_ann: [8.794352531433105, 23.14771051445862]

---

- Time interval n.3: [529.64, 529.84]
  - \* y\_true: [7.70511517]

```
* v_ann: [9.600768089294434, 23.14771051445862]
```

```


- Time interval n.4: [529.84, 530.04]
* y_true: [7.70012001]
* v_ann: [10.616996765136719, 23.14771051445862]
```

```


- Time interval n.5: [530.04, 530.24]
* y_true: [8.08014987]
* v_ann: [11.228513717651367, 23.14771051445862]
```

```


- Time interval n.6: [530.24, 530.44]
* y_true: [8.17515734]
* v_ann: [11.956875801086426, 23.14771051445862]
```

```

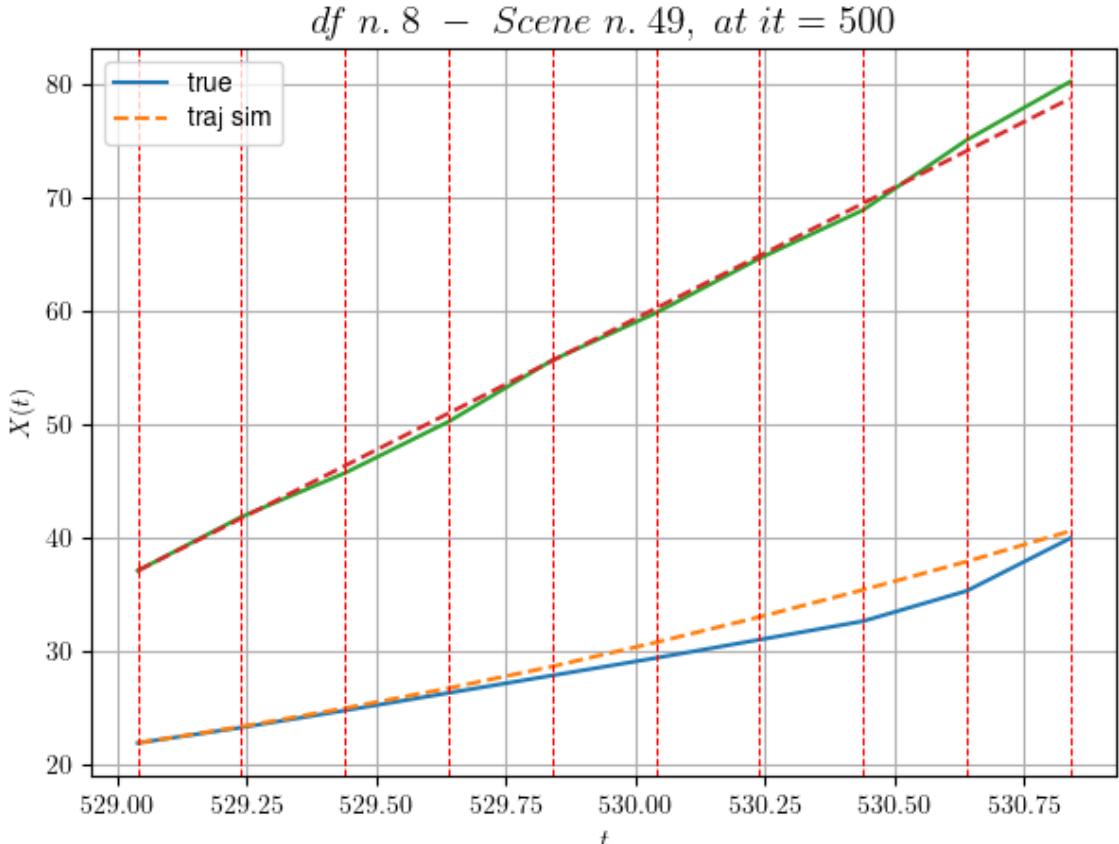

- Time interval n.7: [530.44, 530.64]
* y_true: [13.33942373]
* v_ann: [12.468265533447266, 23.14771051445862]
```

```


- Time interval n.8: [530.64, 530.84]
* y_true: [23.25064431]
* v_ann: [13.457168579101562, 23.14771051445862]
```

```


* err= 1.3081992455884657
* Learning rate NN = 1.6677173334755935e-05
* diff = 0.02944582143573582
```



For scene 49/79

- \* use LR\_NN=0.0001 with err=26.49140348371639 at it=24
- \* v0\_scn\_mean = 23.421802093827896
- \* MAE = 1.3081992455884657

---



---

df n.8, scene n.50/79

---



---

We have 5 time intervals inside [531.84, 532.84]

- Time interval n.0: [531.84, 532.04]
  - \* y\_true: [10.82542785]
  - \* v\_ann: [12.210158348083496, 23.47241077464456]

---

- Time interval n.1: [532.04, 532.24]
  - \* y\_true: [7.02530718]
  - \* v\_ann: [12.508489608764648, 23.47241077464456]

---

- Time interval n.2: [532.24, 532.44]
  - \* y\_true: [8.3145217]
  - \* v\_ann: [14.297647476196289, 23.47241077464456]

---

- Time interval n.3: [532.44, 532.64]
  - \* y\_true: [17.37092059]

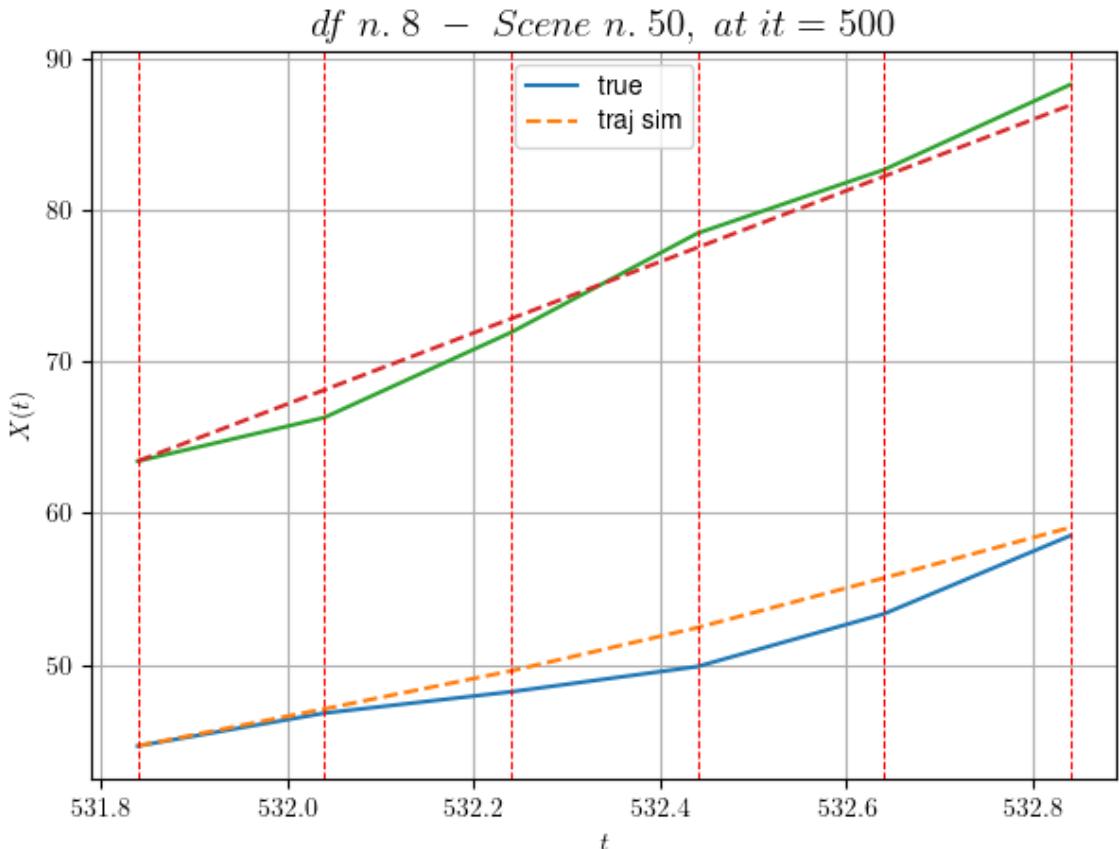
```
* v_ann: [16.354562759399414, 23.47241077464456]
```

---

```
- Time interval n.4: [532.64, 532.84]
* y_true: [25.81155064]
* v_ann: [16.676162719726562, 23.47241077464456]
```

---

```
* err= 1.7945729876877436
* Learning rate NN = 3.874203684972599e-06
* diff = 0.0027666529934162742
```



For scene 50/79

```
* use LR_NN=1e-05 with err=7.218979972742567 at it=24
* v0_scn_mean = 23.733514343609503
* MAE = 1.6837535505911876
```

---



---



---

df n.8, scene n.51/79

---



---



---

We have 3 time intervals inside [536.64, 537.24]

```
- Time interval n.0: [536.64, 536.84]
* y_true: [10.77027677]
* v_ann: [12.554335594177246, 15.683354883415708]
```

---



---

- Time interval n.1: [536.84, 537.04]

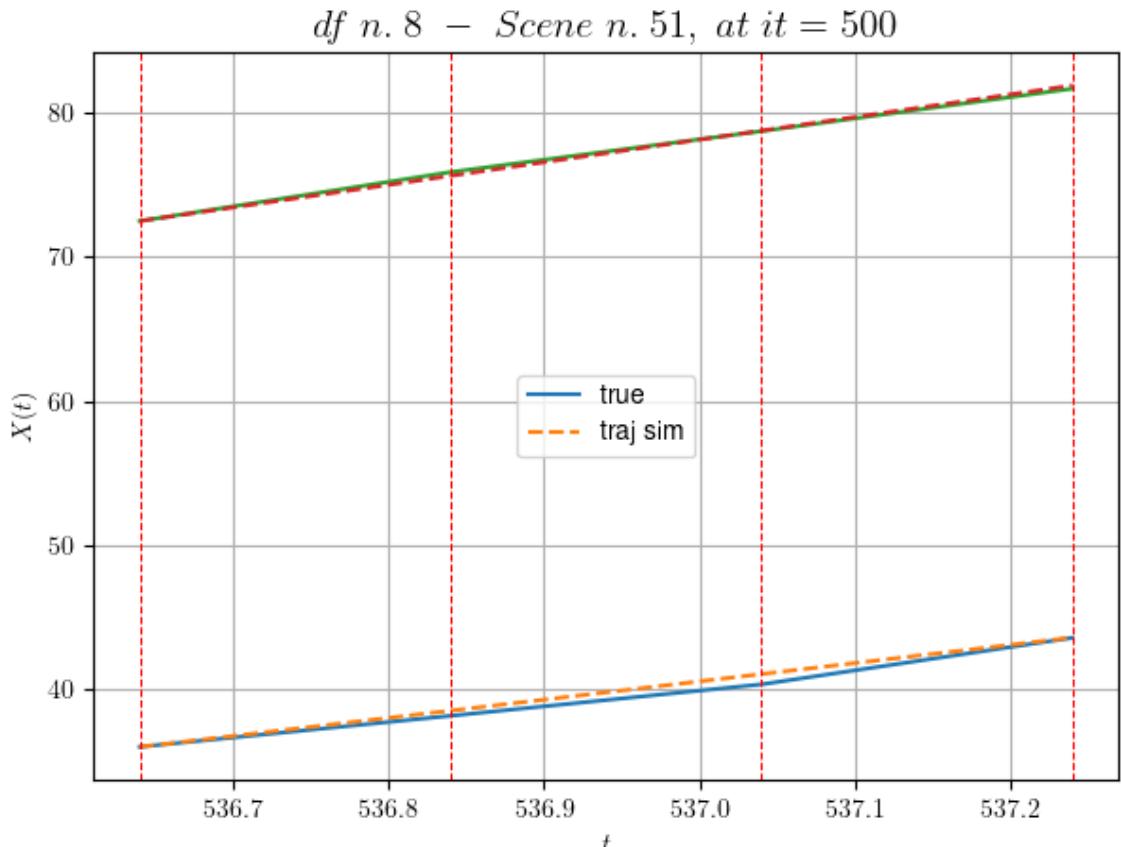
```
* y_true: [10.91031236]
* v_ann: [12.695005416870117, 15.683354883415708]
```

---

```
- Time interval n.2: [537.04, 537.24]
* y_true: [16.15053495]
* v_ann: [12.66718864440918, 15.683354883415708]
```

---

```
* err= 0.094685992511591
* Learning rate NN = 2.952449540316593e-05
* diff = 2.111075474314772e-05
```



For scene 51/79

```
* use LR_NN=5e-05 with err=14.793285893312003 at it=24
* v0_scn_mean = 16.25602068797071
* MAE = 0.09409124018488582
```

---



---



---

df n.8, scene n.52/79

---



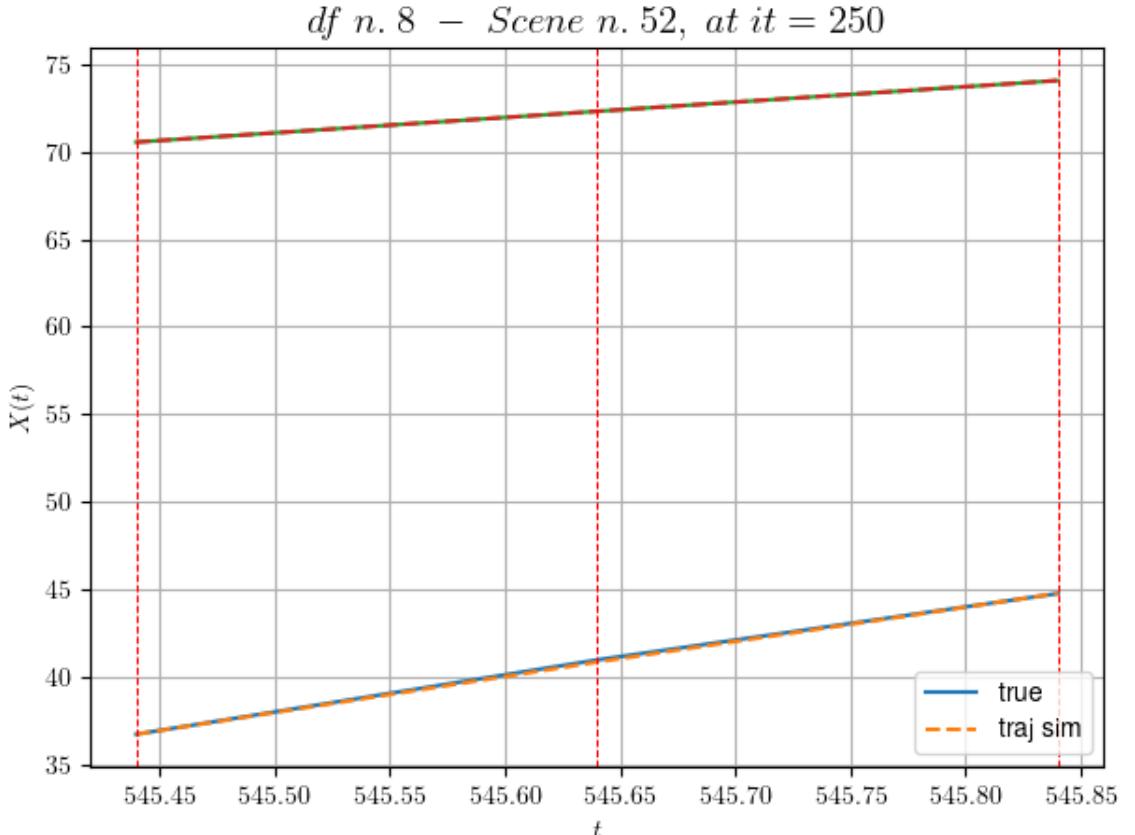
---



---

We have 2 time intervals inside [545.44, 545.84]

```
* err= 0.0025841941619839455
* Learning rate NN = 8.999999408842996e-05
* diff = 1.9117214810184316e-07
```



For scene 52/79

```
* use LR_NN=0.0001 with err=14.981044177014372 at it=24
* v0_scn_mean = 10.496813362264438
* MAE = 0.002543555931451394
```

---



---

df n.8, scene n.53/79

---



---

We have 7 time intervals inside [548.04, 549.44]

- Time interval n.0: [548.04, 548.24]
  - \* y\_true: [10.09033294]
  - \* v\_ann: [11.350531578063965, 22.28422335728368]

---

- Time interval n.1: [548.24, 548.44]
  - \* y\_true: [13.93051874]
  - \* v\_ann: [11.463052749633789, 22.28422335728368]

---

- Time interval n.2: [548.44, 548.64]
  - \* y\_true: [16.31069106]
  - \* v\_ann: [12.273804664611816, 22.28422335728368]

---

- Time interval n.3: [548.64, 548.84]
  - \* y\_true: [11.33053134]

```
* v_ann: [13.804976463317871, 22.28422335728368]
```

---

```
- Time interval n.4: [548.84, 549.04]
* y_true: [13.12068702]
* v_ann: [13.359687805175781, 22.28422335728368]
```

---

```
- Time interval n.5: [549.04, 549.24]
* y_true: [9.70054689]
* v_ann: [13.891247749328613, 22.28422335728368]
```

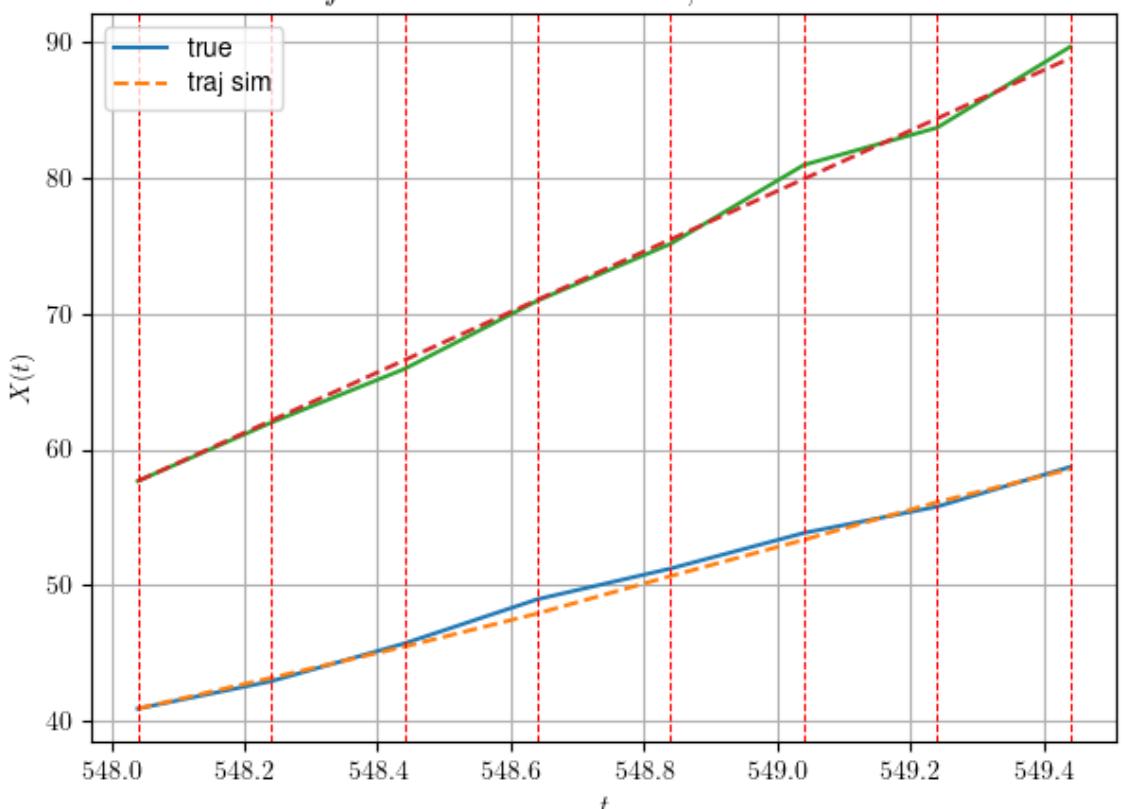
---

```
- Time interval n.6: [549.24, 549.44]
* y_true: [14.67096298]
* v_ann: [12.152385711669922, 22.28422335728368]
```

---

```
* err= 0.29413648837420847
* Learning rate NN = 0.00025418648147024214
* diff = 0.00790532649747211
```

*df n. 8 – Scene n. 53, at it = 500*



For scene 53/79

```
* use LR_NN=0.001 with err=20.44811952658983 at it=24
* v0_scn_mean = 22.59285442293178
* MAE = 0.2663313427770221
```

df n.8, scene n.54/79

We have 4 time intervals inside [574.24, 575.04]

- Time interval n.0: [574.24, 574.44]
  - \* y\_true: [18.8213558]
  - \* v\_ann: [24.24928092956543, 19.077749443552168]

- Time interval n.1: [574.44, 574.64]

- \* y\_true: [30.87266665]
  - \* v\_ann: [23.17718505859375, 19.077749443552168]

- Time interval n.2: [574.64, 574.84]

- \* y\_true: [28.81373524]
  - \* v\_ann: [23.180246353149414, 19.077749443552168]

- Time interval n.3: [574.84, 575.04]

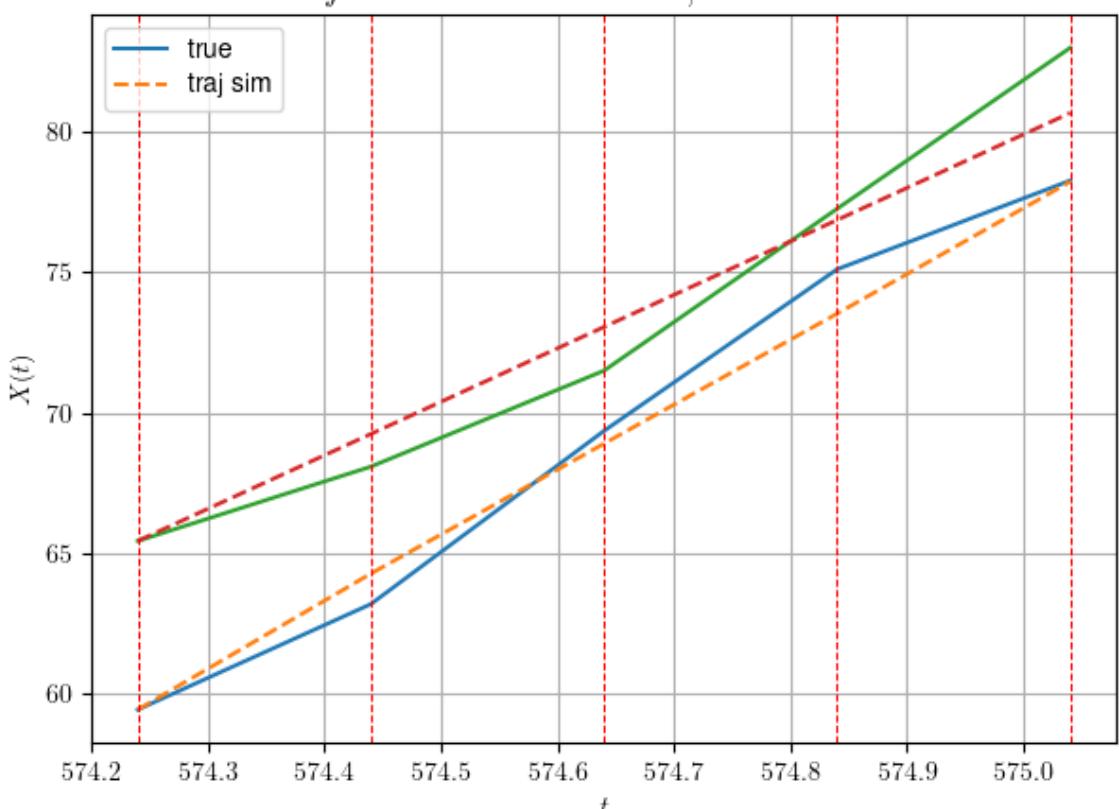
- \* y\_true: [15.81682936]
  - \* v\_ann: [23.517906188964844, 19.077749443552168]

\* err= 1.323270212260576

\* Learning rate NN = 0.000239148415857926

\* diff = 0.00035324810517756156

df n. 8 – Scene n. 54, at it = 500



For scene 54/79

```
* use LR_NN=0.0005 with err=14.34029134265473 at it=24
* v0_scn_mean = 19.514639465726127
* MAE = 1.2595519442954801
```

```
=====
=====
```

```
df n.8, scene n.55/79
```

```
=====
=====
```

```
We have 3 time intervals inside [584.64, 585.24]
```

- Time interval n.0: [584.64, 584.84]
  - \* y\_true: [24.36091679]
  - \* v\_ann: [28.20079803466797, 18.808680134804522]

```
=====
=====
```

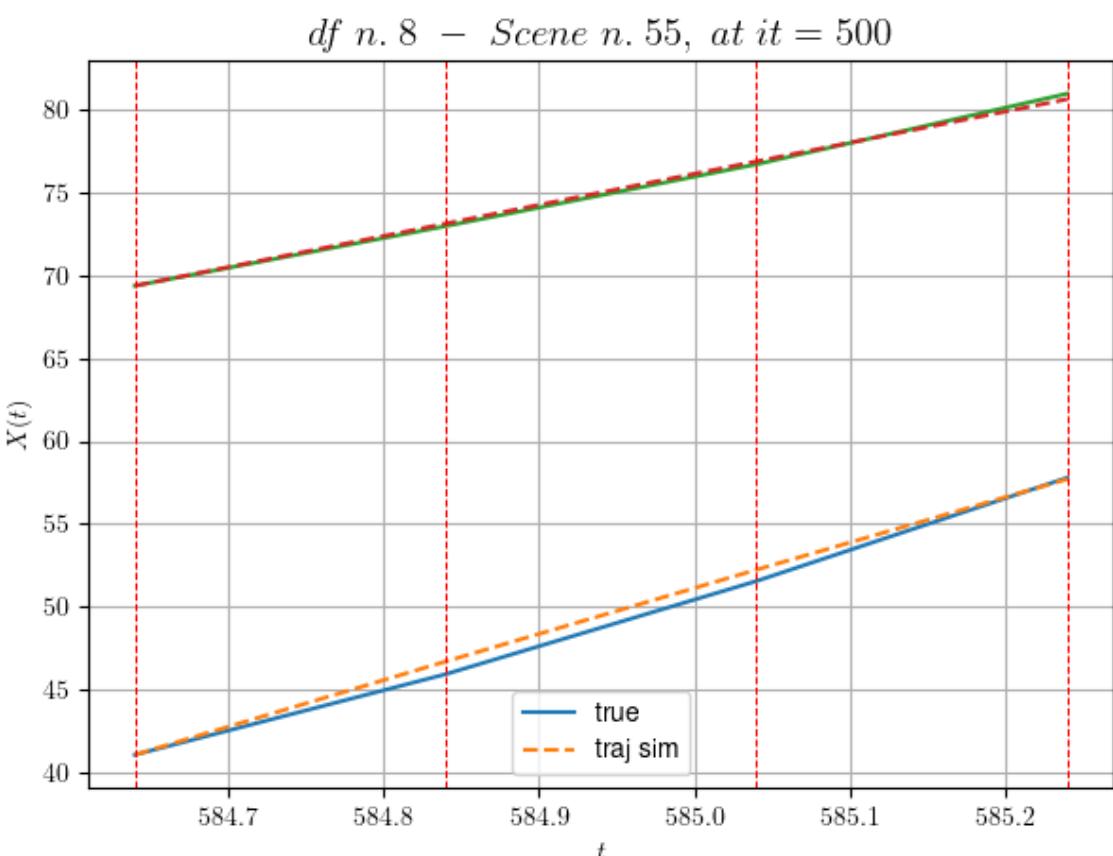
- Time interval n.1: [584.84, 585.04]
  - \* y\_true: [28.1513048]
  - \* v\_ann: [27.733579635620117, 18.808680134804522]

```
=====
=====
```

- Time interval n.2: [585.04, 585.24]
  - \* y\_true: [31.25183435]
  - \* v\_ann: [27.39009666442871, 18.808680134804522]

```
=====
=====
```

- \* err= 0.15432919348426277
- \* Learning rate NN = 5.9048988987342454e-06
- \* diff = 7.235720594012118e-05



```
For scene 55/79
* use LR_NN=1e-05 with err=8.686036991710738 at it=24
* v0_scn_mean = 19.256332929327275
* MAE = 0.15359214966045437
```

---



---

```
df n.8, scene n.56/79
```

---



---

```
We have 2 time intervals inside [587.44, 587.84]
```

- Time interval n.0: [587.44, 587.64]
  - \* y\_true: [23.77240101]
  - \* v\_ann: [23.074552536010742, 30.037171265454383]

---

- Time interval n.1: [587.64, 587.84]

- \* y\_true: [21.65253003]
  - \* v\_ann: [22.243526458740234, 30.037171265454383]

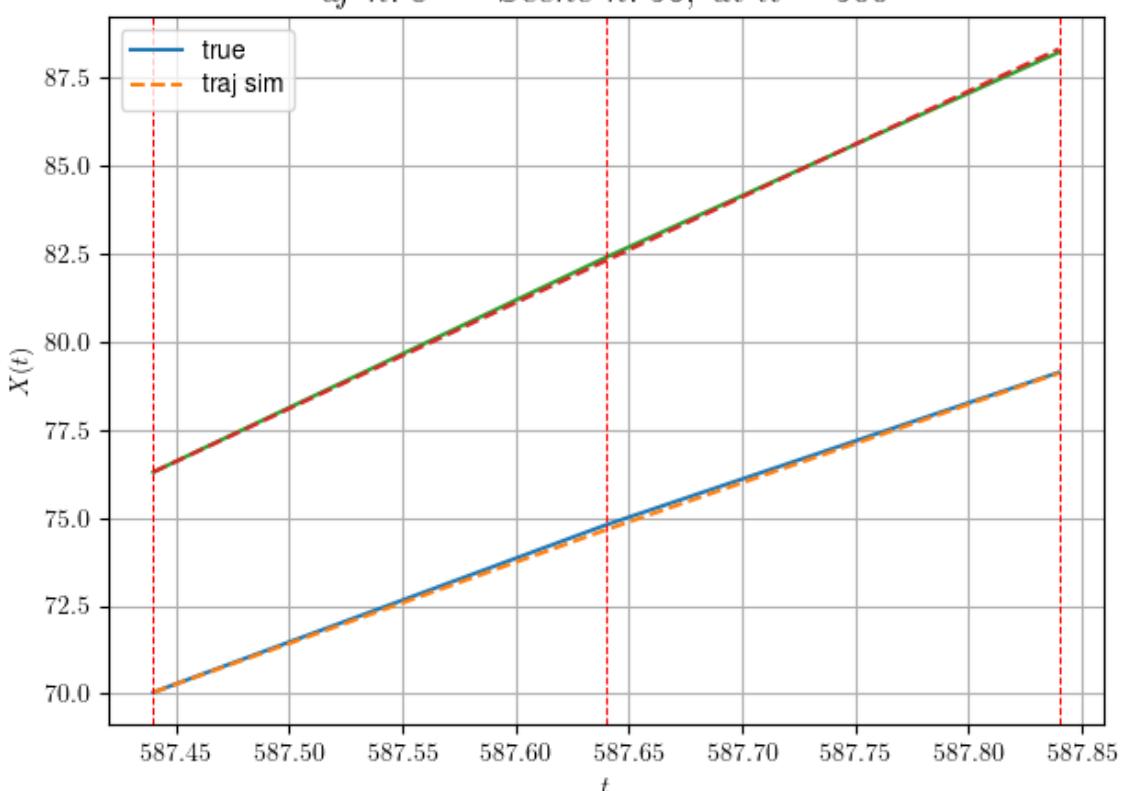
---

- \* err= 0.006224863235169857

- \* Learning rate NN = 0.00036449998151510954

- \* diff = 0.0004371874047681716

*df n. 8 – Scene n. 56, at it = 500*



```
For scene 56/79
```

```
* use LR_NN=0.0005 with err=0.12261074754041654 at it=24
* v0_scn_mean = 30.03568441482847
* MAE = 0.006224863235169857
```

```
=====
=====

df n.8, scene n.57/79
=====

We have 8 time intervals inside [592.84,594.44]
- Time interval n.0: [592.84, 593.04]
 * y_true: [18.30050522]
 * v_ann: [21.519689559936523, 20.35405742351328]

- Time interval n.1: [593.04, 593.24]
 * y_true: [18.46062677]
 * v_ann: [20.67732048034668, 20.35405742351328]

- Time interval n.2: [593.24, 593.44]
 * y_true: [23.16095213]
 * v_ann: [20.39981460571289, 20.35405742351328]

- Time interval n.3: [593.44, 593.64]
 * y_true: [21.00101152]
 * v_ann: [20.81218147277832, 20.35405742351328]

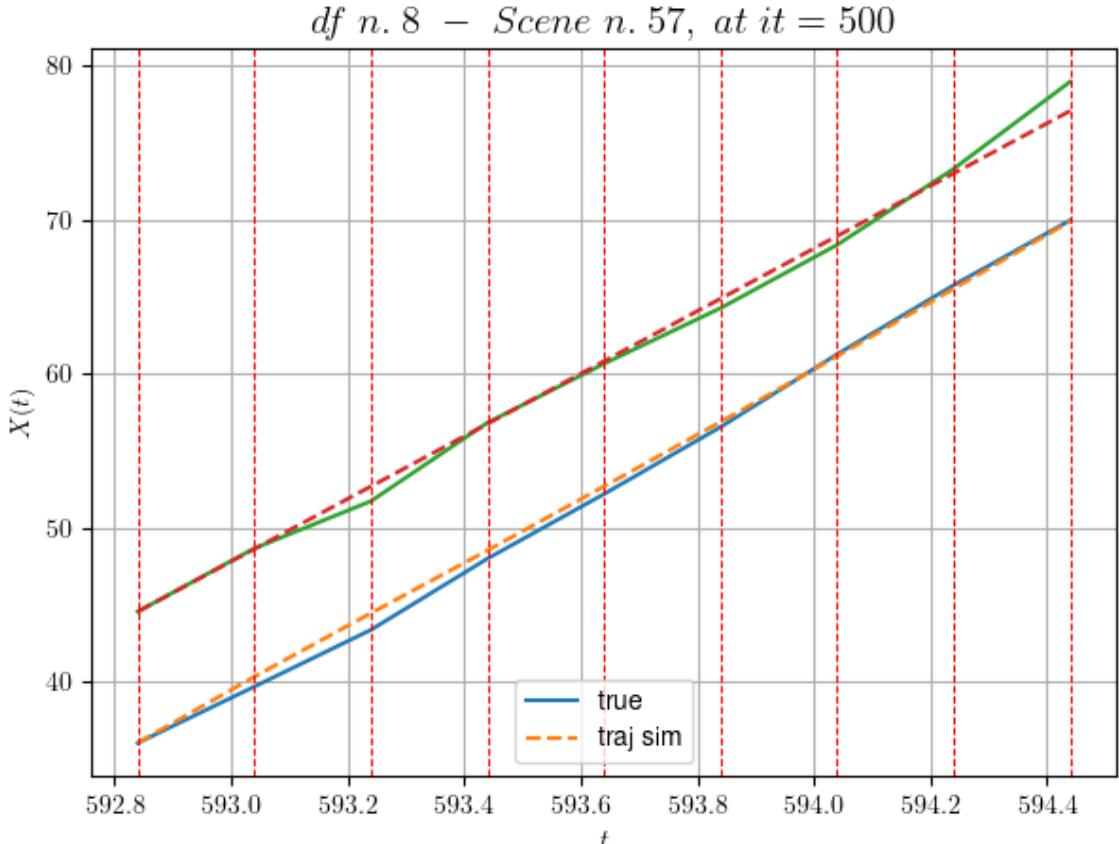
- Time interval n.4: [593.64, 593.84]
 * y_true: [21.80126526]
 * v_ann: [20.971153259277344, 20.35405742351328]

- Time interval n.5: [593.84, 594.04]
 * y_true: [23.66159236]
 * v_ann: [21.370723724365234, 20.35405742351328]

- Time interval n.6: [594.04, 594.24]
 * y_true: [22.4617536]
 * v_ann: [21.949831008911133, 20.35405742351328]

- Time interval n.7: [594.24, 594.44]
 * y_true: [21.12188145]
 * v_ann: [21.918535232543945, 20.35405742351328]

* err= 0.42662932160084743
* Learning rate NN = 0.00020589104678947479
* diff = 0.003954043164492715
```



For scene 57/79

- \* use LR\_NN=0.001 with err=41.001119042766305 at it=24
- \* v0\_scn\_mean = 20.739895126499388
- \* MAE = 0.3586308189062996

---



---

df n.8, scene n.58/79

---



---

We have 3 time intervals inside [36.44, 37.04]

- Time interval n.0: [36.44, 36.64]
  - \* y\_true: [16.4303266 8.20020738]
  - \* v\_ann: [12.081276893615723, 11.412102699279785, 17.156795934620792]

---



---

- Time interval n.1: [36.64, 36.84]
  - \* y\_true: [18.55044671 6.80018642]
  - \* v\_ann: [12.287602424621582, 12.534134864807129, 17.156795934620792]

---



---

- Time interval n.2: [36.84, 37.04]
  - \* y\_true: [12.9262384 10.75446129]
  - \* v\_ann: [12.426531791687012, 12.821135520935059, 17.156795934620792]

---

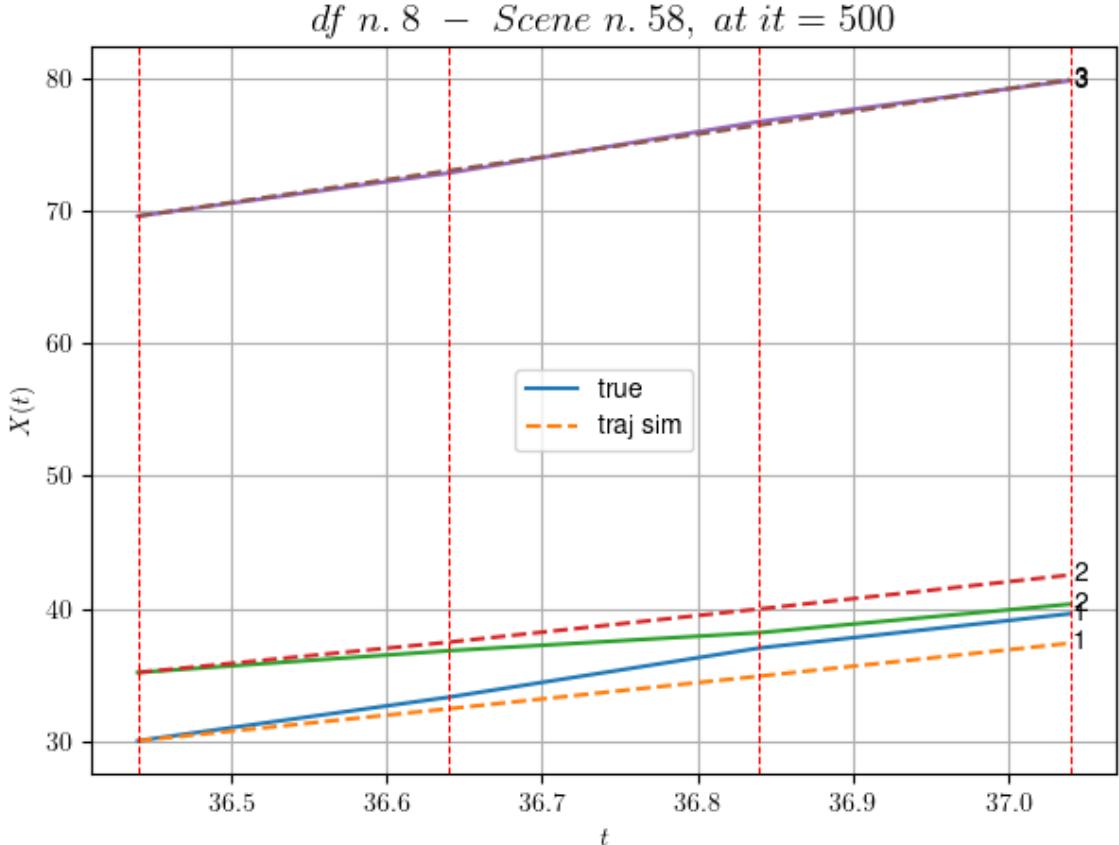


---

```

* err= 1.5647606651506363
* Learning rate NN = 0.0005904899444431067
* diff = 0.000354274145912159

```



For scene 58/79

```

* use LR_NN=0.001 with err=16.77356411237847 at it=24
* v0_scn_mean = 17.927387601911484
* MAE = 1.5444441521321772

```

---



---

df n.8, scene n.59/79

---



---

We have 4 time intervals inside [50.24,51.04]

- Time interval n.0: [50.24, 50.44]
  - \* y\_true: [14.83043604 14.50055453]
  - \* v\_ann: [18.74928092956543, 23.461843490600586, 3 0.157660974110687]

- Time interval n.1: [50.44, 50.64]
  - \* y\_true: [15.35052738 17.38080918]
  - \* v\_ann: [16.109106063842773, 15.516252517700195, 3 0.157660974110687]

- Time interval n.2: [50.64, 50.84]
  - \* y\_true: [19.54078826 19.30097894]

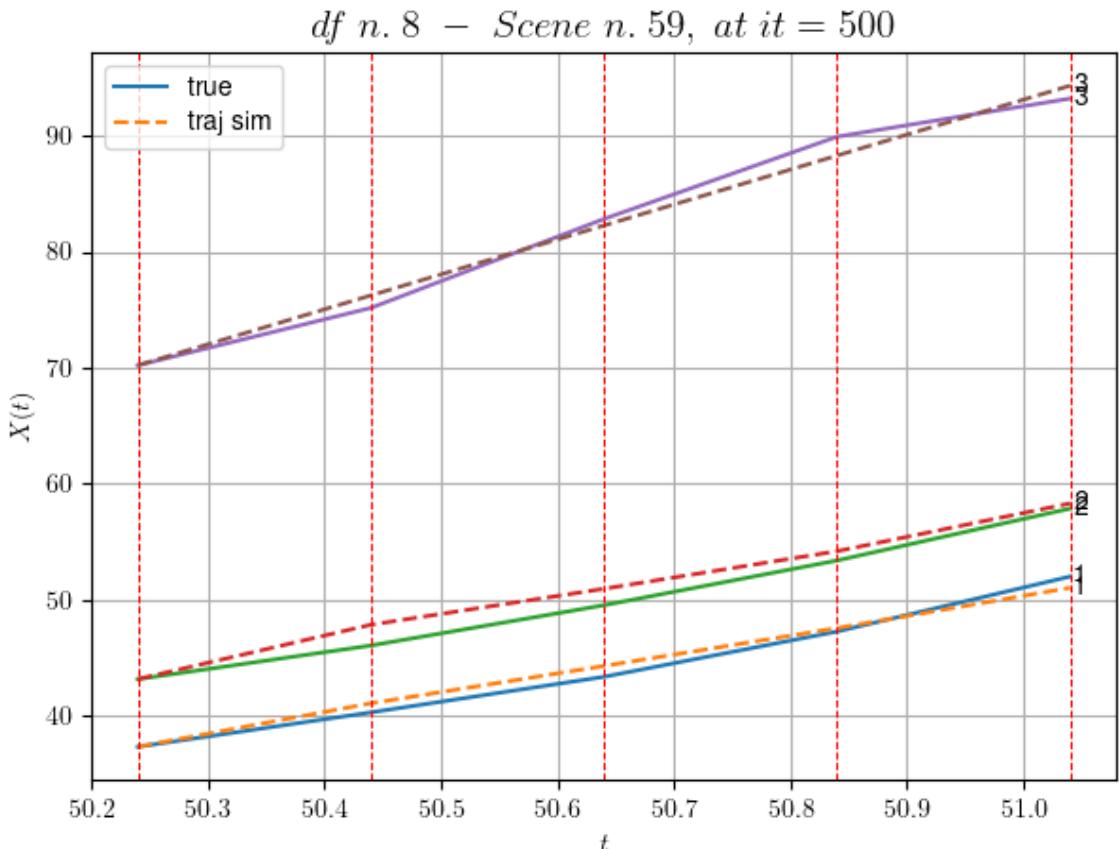
\* v\_ann: [16.311264038085938, 16.209758758544922, 3  
0.157660974110687]

---

- Time interval n.3: [50.84, 51.04]  
\* y\_true: [23.72114006 22.40641196]  
\* v\_ann: [17.439638137817383, 20.616207122802734, 3  
0.157660974110687]

---

\* err= 0.92919549697499  
\* Learning rate NN = 0.000478296831715852  
\* diff = 0.0014175498793073116



For scene 59/79

\* use LR\_NN=0.001 with err=13.239356790555334 at it=24  
\* v0\_scn\_mean = 30.148201322742754  
\* MAE = 0.825545184573763

---



---

df n.8, scene n.60/79

---



---

We have 4 time intervals inside [102.24,103.04]  
- Time interval n.0: [102.24, 102.44]  
\* y\_true: [22.78095819 15.94092959]  
\* v\_ann: [20.76395034790039, 20.979291915893555, 3  
1.34829198332158]

```

 - Time interval n.1: [102.44, 102.64]

 * y_true: [23.36120187 12.10080168]

 * v_ann: [20.067232131958008, 20.727680206298828, 3

 1.34829198332158]

 - Time interval n.2: [102.64, 102.84]

 * y_true: [20.51121756 22.37162153]

 * v_ann: [19.037864685058594, 19.14725112915039, 3

 1.34829198332158]

 - Time interval n.3: [102.84, 103.04]

 * y_true: [23.62167761 20.76175162]

 * v_ann: [19.75711441040039, 20.68166160583496, 31.

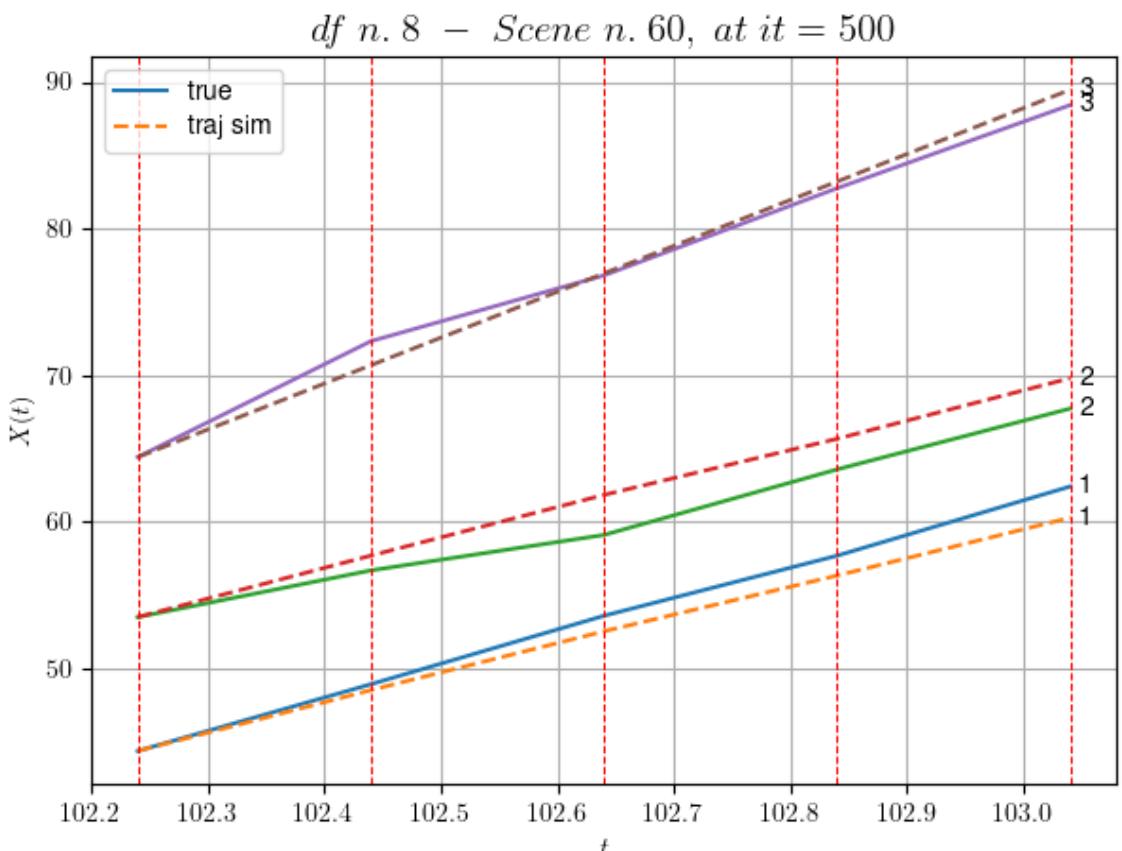
 34829198332158]

* err= 1.921482077789679

* Learning rate NN = 0.000478296831715852

* diff = 0.005419791326905621

```



For scene 60/79  
 \* use LR\_NN=0.001 with err=12.678138068430203 at it=24  
 \* v0\_scn\_mean = 31.26739452485778  
 \* MAE = 1.8578023029424544

```
df n.8, scene n.61/79
```

---



---

We have 3 time intervals inside [108.84,109.44]

- Time interval n.0: [108.84, 109.04]

- \* y\_true: [17.9810803 26.65193678]

- \* v\_ann: [20.712617874145508, 20.595943450927734, 2  
0.54901511261321]

---



---

- Time interval n.1: [109.04, 109.24]

- \* y\_true: [14.30252156 22.9019425 ]

- \* v\_ann: [20.97686195373535, 21.060718536376953, 2  
0.54901511261321]

---



---

- Time interval n.2: [109.24, 109.44]

- \* y\_true: [21.24158827 21.25204953]

- \* v\_ann: [20.512985229492188, 20.41318702697754, 2  
0.54901511261321]

---



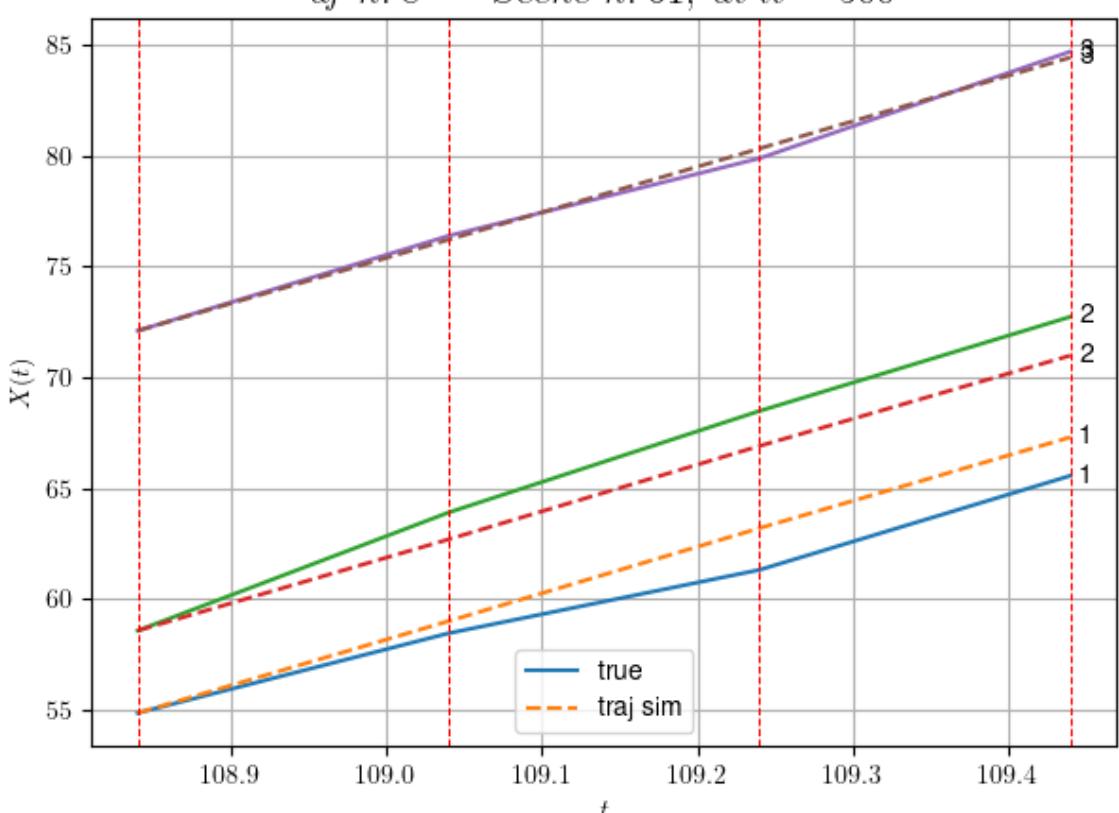
---

- \* err= 1.17995087429377

- \* Learning rate NN = 0.0002952449722215533

- \* diff = 0.0001313207308093478

*df n. 8 – Scene n. 61, at it = 500*



For scene 61/79

\* use LR\_NN=0.0005 with err=6.5802788867711 at it=24

```
* v0_scn_mean = 21.116073781527625
* MAE = 1.1720911358945025
```

---



---

df n.8, scene n.62/79

---



---

We have 2 time intervals inside [130.04, 130.44]

- Time interval n.0: [130.04, 130.24]

\* y\_true: [23.9806113 21.72216875]

\* v\_ann: [25.815351486206055, 23.541288375854492, 4  
1.05562230485272]

---



---

- Time interval n.1: [130.24, 130.44]

\* y\_true: [20.38064152 27.22317612]

\* v\_ann: [21.080366134643555, 22.267547607421875, 4  
1.05562230485272]

---



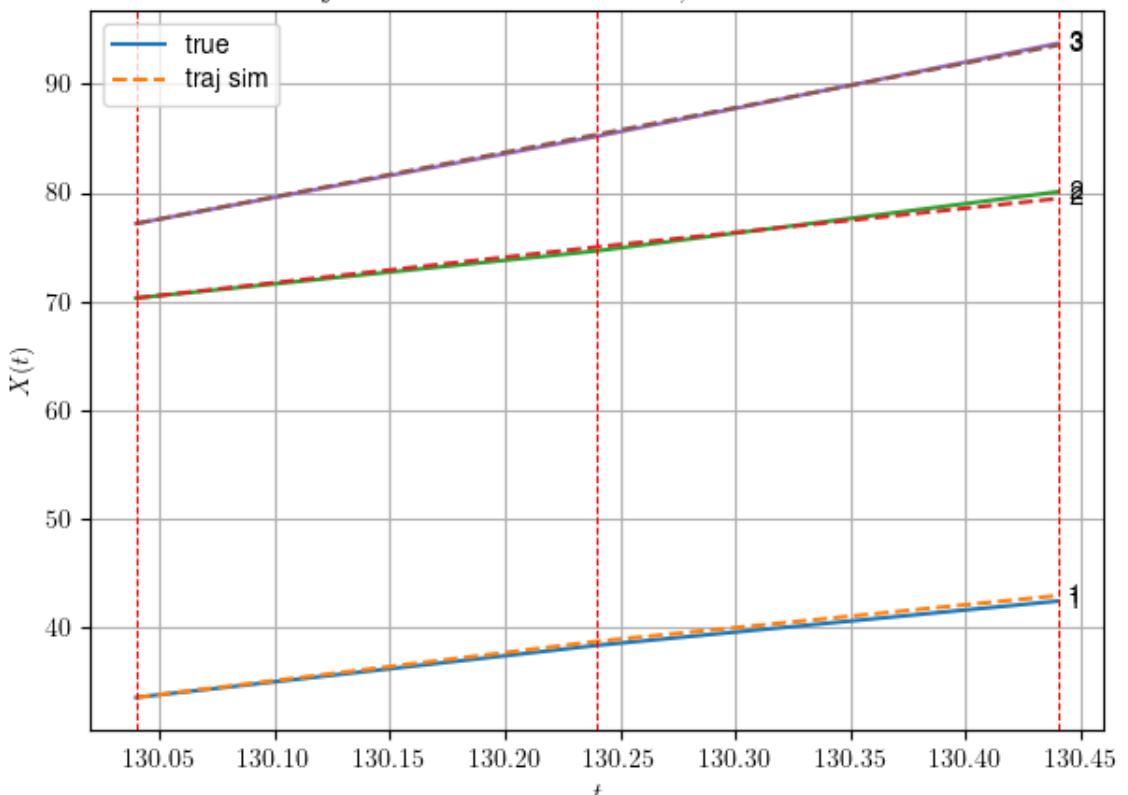
---

\* err= 0.10914882872116077

\* Learning rate NN = 0.00036449998151510954

\* diff = 0.0007870402126770046

*df n. 8 – Scene n. 62, at it = 500*



For scene 62/79

\* use LR\_NN=0.0005 with err=8.912641600360812 at it=24

\* v0\_scn\_mean = 40.39228546293468

\* MAE = 0.10914882872116077

---



---

```
=====
```

df n.8, scene n.63/79

```
=====
```

```
We have 5 time intervals inside [215.24,216.24]
- Time interval n.0: [215.24, 215.44]
 * y_true: [1.34614625 10.42531549]
 * v_ann: [18.259403228759766, 21.27968978881836, 1
5.10068961055008]
```

```

- Time interval n.1: [215.44, 215.64]
 * y_true: [18.28906766 10.32533879]
 * v_ann: [14.821125030517578, 13.370882987976074, 1
5.10068961055008]
```

```

- Time interval n.2: [215.64, 215.84]
 * y_true: [29.02100933 15.78058213]
 * v_ann: [15.011445045471191, 13.56877326965332, 1
5.10068961055008]
```

```

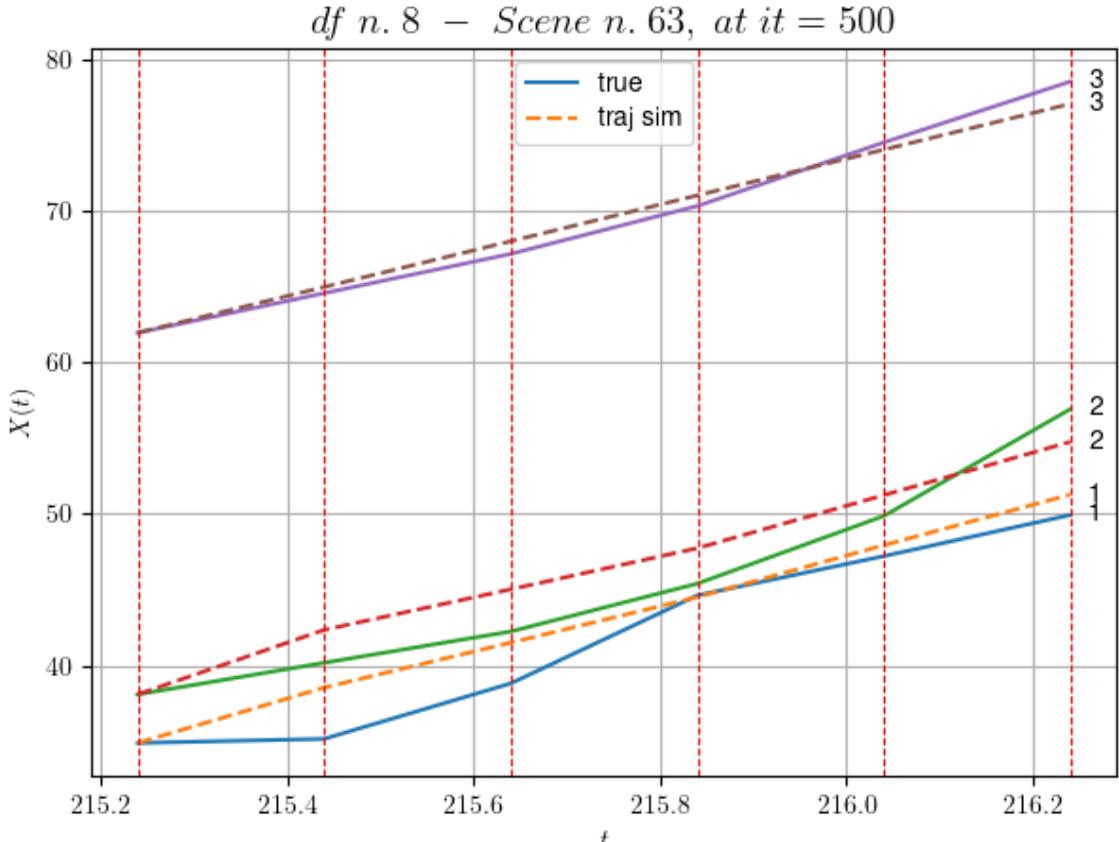
- Time interval n.3: [215.84, 216.04]
 * y_true: [12.95052595 22.3009853]
 * v_ann: [17.11017417907715, 17.48793601989746, 15.
10068961055008]
```

```

- Time interval n.4: [216.04, 216.24]
 * y_true: [13.56563519 35.25195514]
 * v_ann: [16.70381736755371, 17.58183479309082, 15.
10068961055008]
```

```

* err= 2.7335365962094382
* Learning rate NN = 0.0003874204121530056
* diff = 0.02878845207660996
```



For scene 63/79

- \* use LR\_NN=0.001 with err=40.58152482174085 at it=24
- \* v0\_scn\_mean = 15.99464756497044
- \* MAE = 2.544573558379622

---



---

df n.8, scene n.64/79

---



---

We have 4 time intervals inside [222.64, 223.44]

- Time interval n.0: [222.64, 222.84]
  - \* y\_true: [3.4148313 7.54419185]
  - \* v\_ann: [5.130815505981445, 5.700521945953369, 12.428538122911196]

---



---

- Time interval n.1: [222.84, 223.04]
  - \* y\_true: [1.34614625 9.61287691]
  - \* v\_ann: [6.2356157302856445, 5.699890613555908, 12.428538122911196]

---



---

- Time interval n.2: [223.04, 223.24]
  - \* y\_true: [ 1.34614625 10.20300693]
  - \* v\_ann: [5.581055641174316, 5.58366584777832, 12.428538122911196]

---



---

```

- Time interval n.3: [223.24, 223.44]

 * y_true: [1.34614625 10.35053943]

 * v_ann: [5.593184947967529, 5.638916492462158, 12.

428538122911196]

```

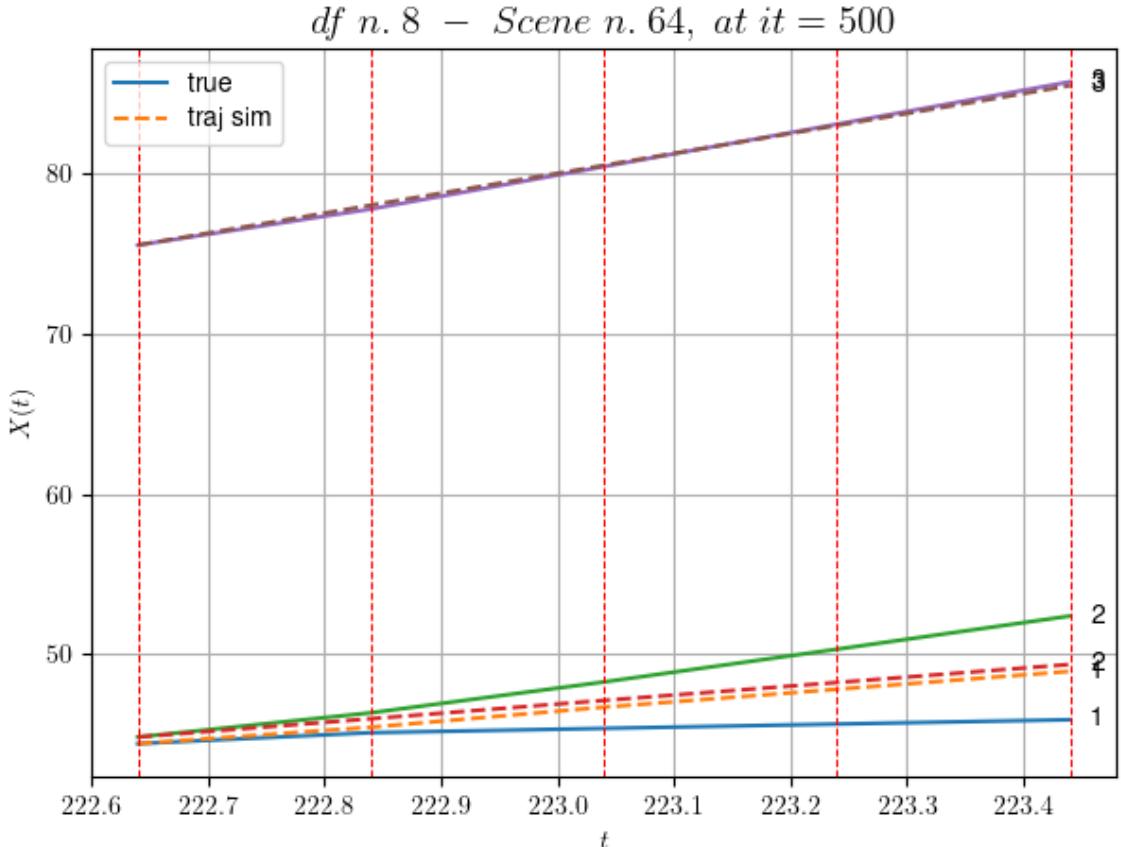
```

* err= 2.0446428344347125

* Learning rate NN = 0.000478296831715852

* diff = 0.00011852728044958738

```



For scene 64/79

```

* use LR_NN=0.001 with err=25.212570703694638 at it=24
* v0_scn_mean = 13.482825046615995
* MAE = 2.03630268265803

```

```

=====

=====

df n.8, scene n.65/79
=====

=====

```

We have 5 time intervals inside [225.24, 226.24]

```

- Time interval n.0: [225.24, 225.44]

 * y_true: [9.85023046 1.34614625]

 * v_ann: [8.21755313873291, 8.46259593963623, 13.14

3683398703418]

```

```

- Time interval n.1: [225.44, 225.64]

 * y_true: [11.30531094 1.34614625]

```

```

* v_ann: [8.166997909545898, 8.519936561584473, 13.
143683398703418]

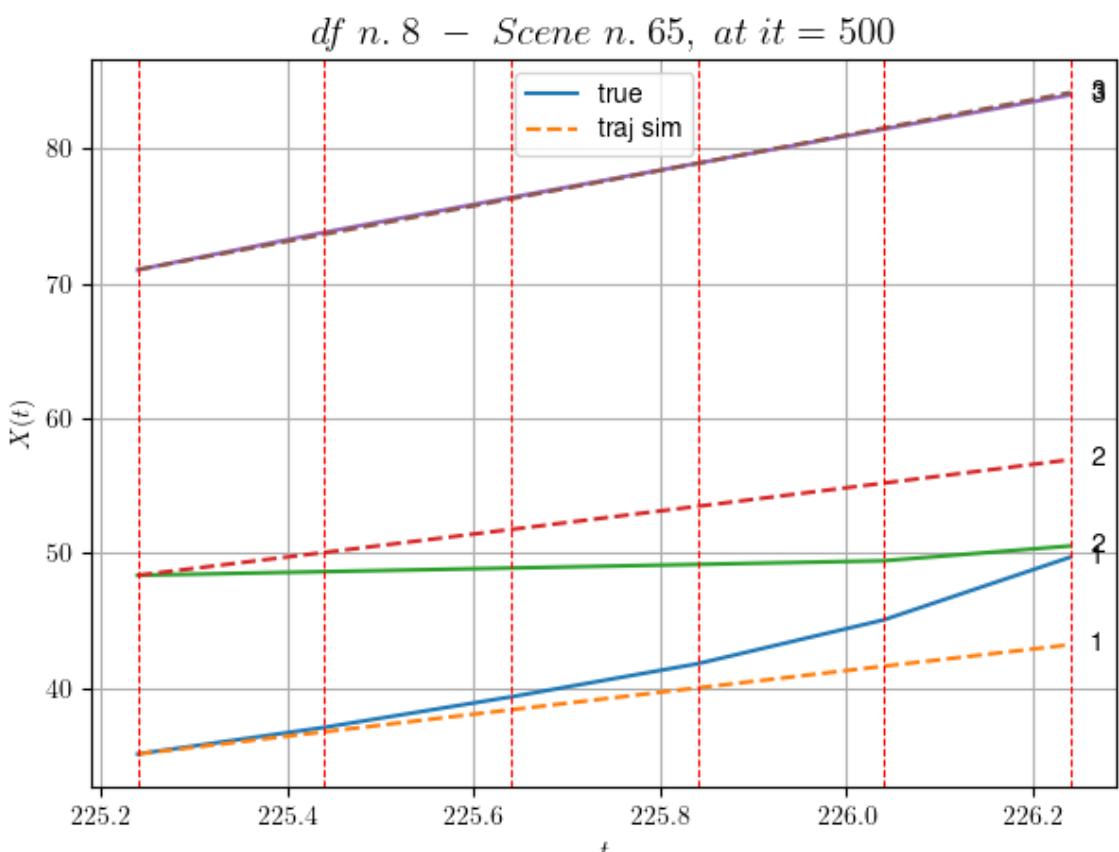
- Time interval n.2: [225.64, 225.84]
* y_true: [12.27536459 1.34614625]
* v_ann: [8.11091423034668, 8.573729515075684, 13.1
43683398703418]

- Time interval n.3: [225.84, 226.04]
* y_true: [16.30233516 1.34614625]
* v_ann: [8.051224708557129, 8.62727165222168, 13.1
43683398703418]

- Time interval n.4: [226.04, 226.24]
* y_true: [23.251759 5.49560672]
* v_ann: [7.976882457733154, 8.686952590942383, 13.
143683398703418]

* err= 8.94844273683218
* Learning rate NN = 3.874203684972599e-06
* diff = 0.019018731568765546

```



For scene 65/79

```

* use LR_NN=1e-05 with err=51.0690496339355 at it=24
* v0_scn_mean = 14.155061637969027
* MAE = 8.94844273683218

```

```
=====
=====
```

df n.8, scene n.66/79

```
=====
=====
```

We have 4 time intervals inside [227.04,227.84]

- Time interval n.0: [227.04, 227.24]
  - \* y\_true: [ 1.34614625 11.86069537]
  - \* v\_ann: [7.047926425933838, 7.669622898101807, 26.

24315546538644]

```

```

- Time interval n.1: [227.24, 227.44]

- \* y\_true: [ 1.34614625 11.90074479]
- \* v\_ann: [6.971789360046387, 7.541141033172607, 26.

24315546538644]

```

```

- Time interval n.2: [227.44, 227.64]

- \* y\_true: [ 1.34614625 14.03099458]
- \* v\_ann: [6.914334297180176, 7.560853958129883, 26.

24315546538644]

```

```

- Time interval n.3: [227.64, 227.84]

- \* y\_true: [ 1.34614625 15.45116111]
- \* v\_ann: [7.150595188140869, 7.765801906585693, 26.

24315546538644]

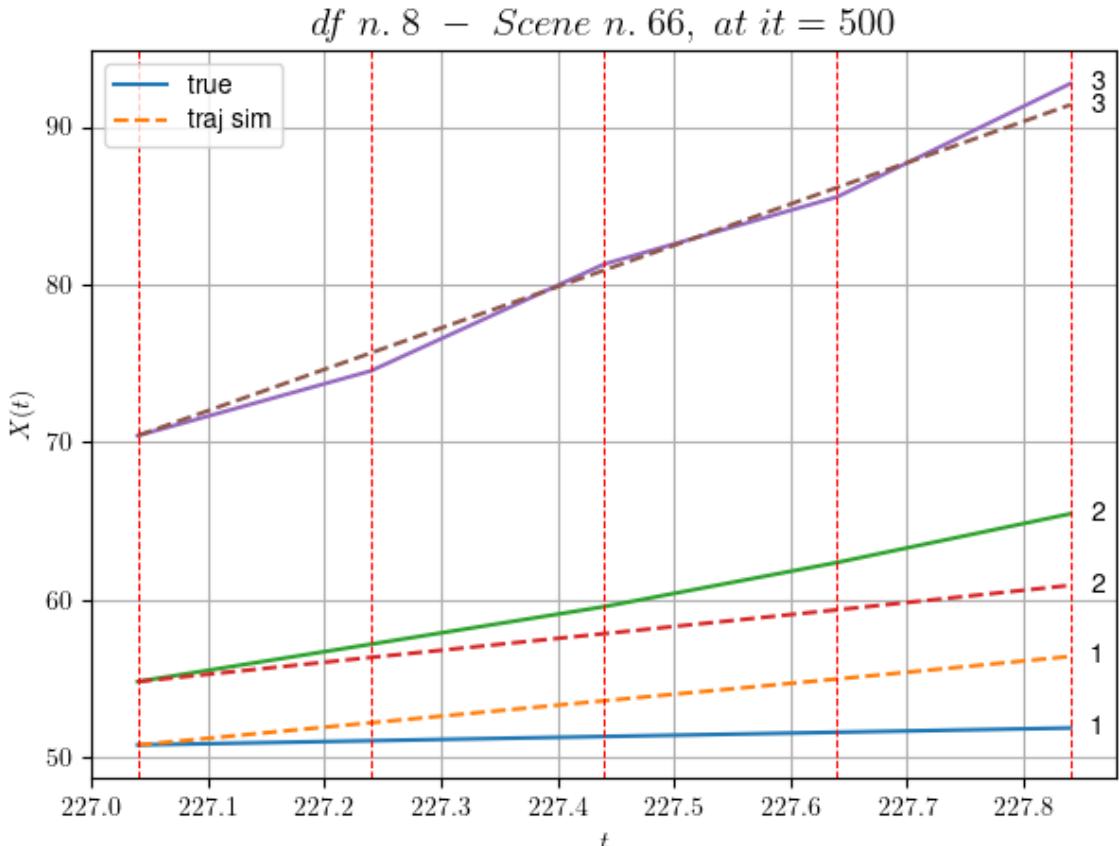
```

```

\* err= 5.023466393472206

\* Learning rate NN = 0.000478296831715852

\* diff = 0.0032900595791627296



For scene 66/79

- \* use LR\_NN=0.001 with err=2.851141549623881 at it=24
- \* v0\_scn\_mean = 26.468565968789253
- \* MAE = 4.983206426804512

---



---

df n.8, scene n.67/79

---



---

We have 2 time intervals inside [237.64, 238.04]

- Time interval n.0: [237.64, 237.84]
  - \* y\_true: [17.80043487 10.22573725]
  - \* v\_ann: [16.152360916137695, 13.033604621887207, 29.702967492374942]

---



---

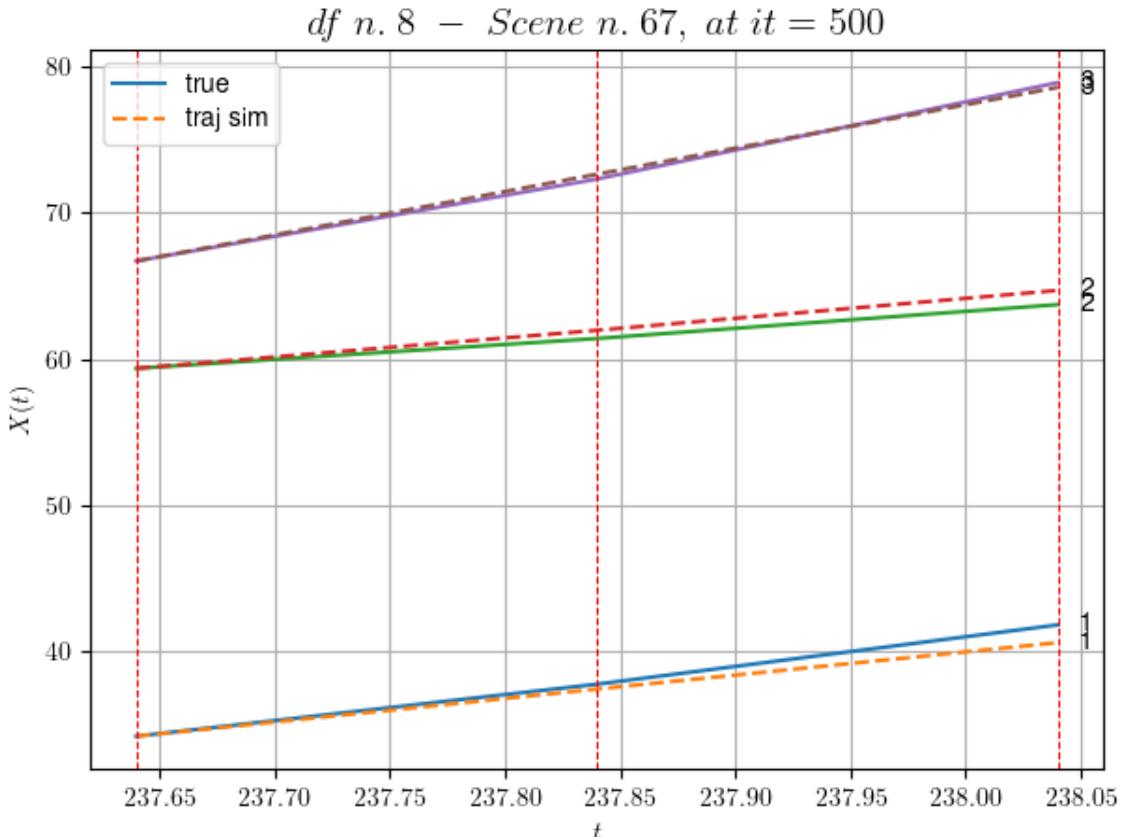
- Time interval n.1: [237.84, 238.04]
  - \* y\_true: [20.29063338 11.60088234]
  - \* v\_ann: [15.87806510925293, 13.65192699432373, 29.702967492374942]

---



---

- \* err= 0.3395019497282381
- \* Learning rate NN = 7.289998848136747e-06
- \* diff = 0.006677734531364832



For scene 67/79

\* use LR\_NN=1e-05 with err=0.39876803744489475 at it=24  
 \* v0\_scn\_mean = 29.720789429496232  
 \* MAE = 0.3054889353524803

---



---

df n.8, scene n.68/79

---



---

We have 2 time intervals inside [239.84, 240.24]

- Time interval n.0: [239.84, 240.04]
  - \* y\_true: [16.30079237 13.85576065]
  - \* v\_ann: [16.285614013671875, 17.70305061340332, 3

0.131239538598884]

---



---

- Time interval n.1: [240.04, 240.24]
  - \* y\_true: [17.06097057 17.27611431]
  - \* v\_ann: [15.401346206665039, 14.702958106994629, 3

0.131239538598884]

---

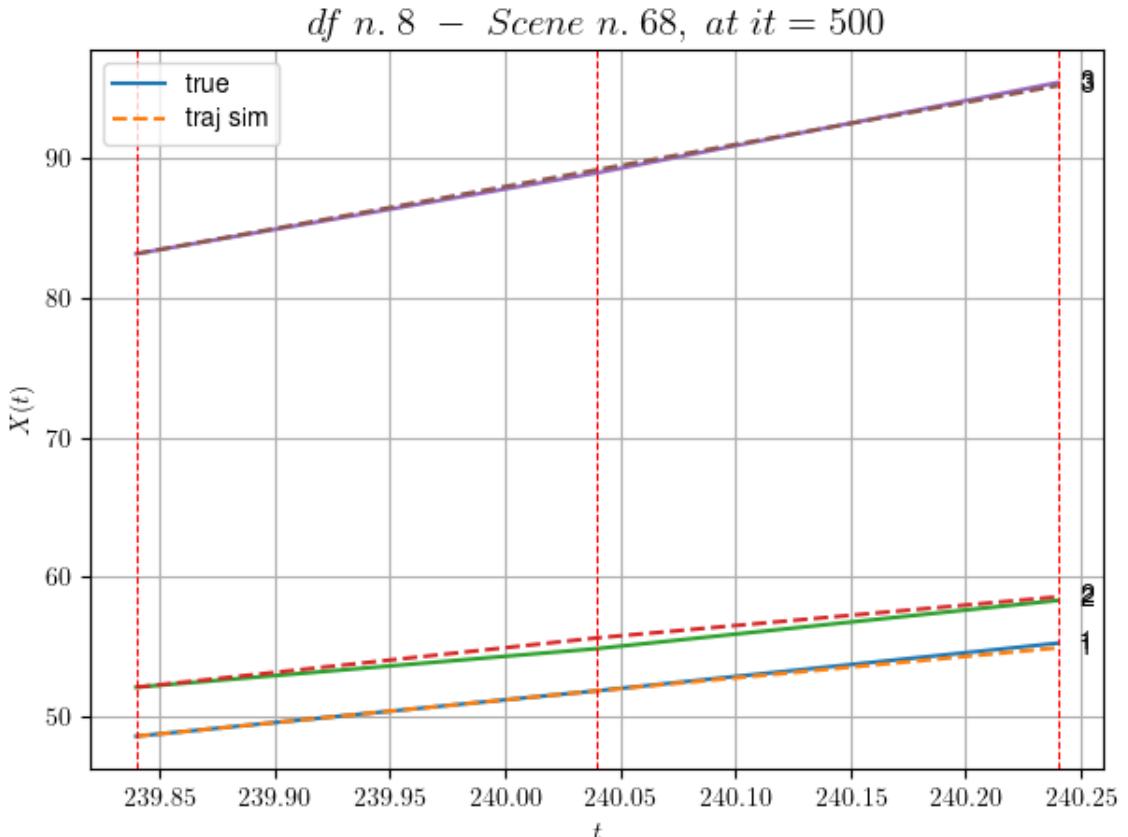


---

\* err= 0.09675747616587187

\* Learning rate NN = 0.0007289999630302191

\* diff = 9.971723442761538e-05



For scene 68/79

```
* use LR_NN=0.001 with err=4.452765391533599 at it=24
* v0_scn_mean = 30.123365172175564
* MAE = 0.09675747616587187
```

---



---

df n.8, scene n.69/79

---



---

We have 4 time intervals inside [243.44, 244.24]

- Time interval n.0: [243.44, 243.64]
  - \* y\_true: [18.26109982 7.28715228]
  - \* v\_ann: [13.352336883544922, 12.022618293762207, 1

6.742914270050992]

---

- Time interval n.1: [243.64, 243.84]
  - \* y\_true: [23.05153691 9.06731774]
  - \* v\_ann: [13.815149307250977, 11.944670677185059, 1

6.742914270050992]

---

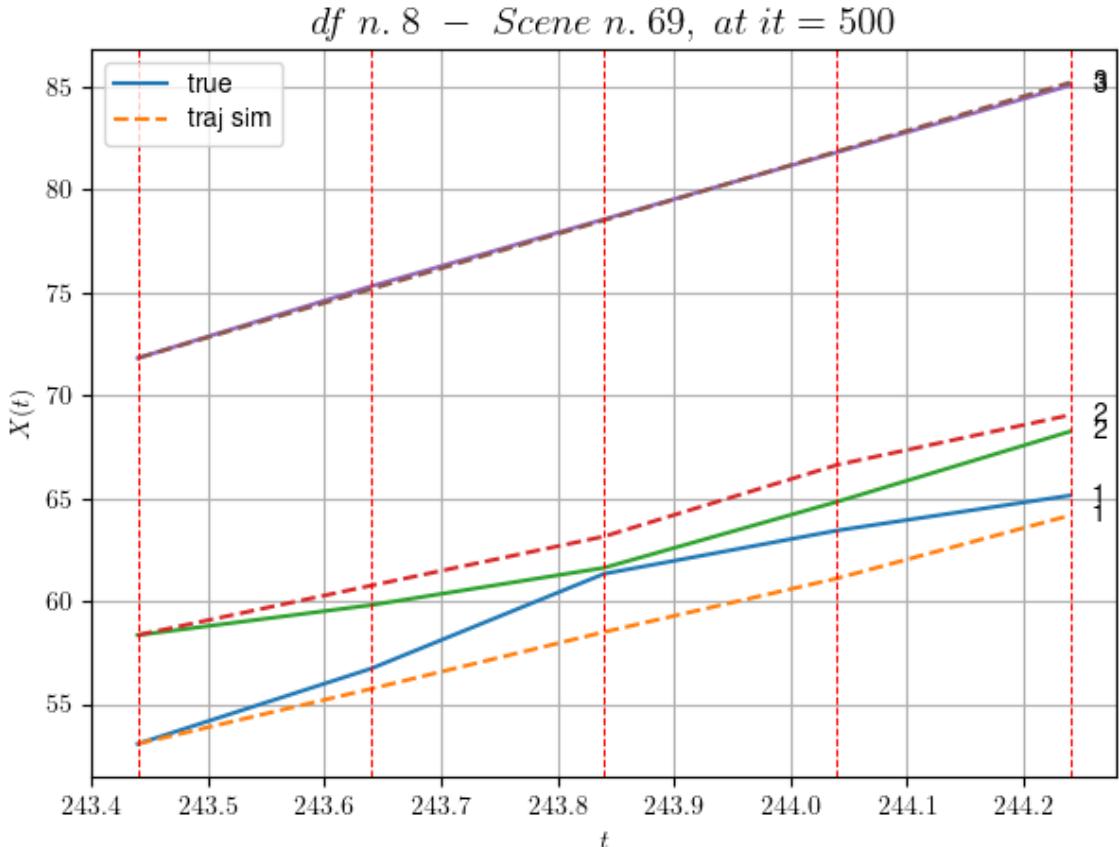
- Time interval n.2: [243.84, 244.04]
  - \* y\_true: [10.52334632 16.05532609]
  - \* v\_ann: [13.047487258911133, 17.39901351928711, 1

6.742914270050992]

---

```
- Time interval n.3: [244.04, 244.24]
 * y_true: [8.51398229 17.08146048]
 * v_ann: [15.301916122436523, 12.109896659851074, 1
6.742914270050992]
```

```
* err= 1.4938140178369463
* Learning rate NN = 0.002391484100371599
* diff = 0.002914214870802345
```



For scene 69/79

```
* use LR_NN=0.005 with err=20.101707663984584 at it=24
* v0_scn_mean = 17.538338818633445
* MAE = 1.0476427743638879
```

df n.8 scene n.70/79

We have 5 time intervals inside [251.64, 252.64]

We have 3 time intervals inside [251.64, 252.84]  
- Time interval n.0: [251.64, 251.84]  
  \* y\_true: [14.32016282 17.2315068 ]  
  \* v\_ann: [12.961379051208496, 15.611274719238281, 1  
9.82490608802427]

- Time interval n.1: [251.84, 252.04]  
  \* y true: [20.34029568 17.65159646]

```

* v_ann: [14.965082168579102, 16.02594566345215, 1
9.82490608802427]

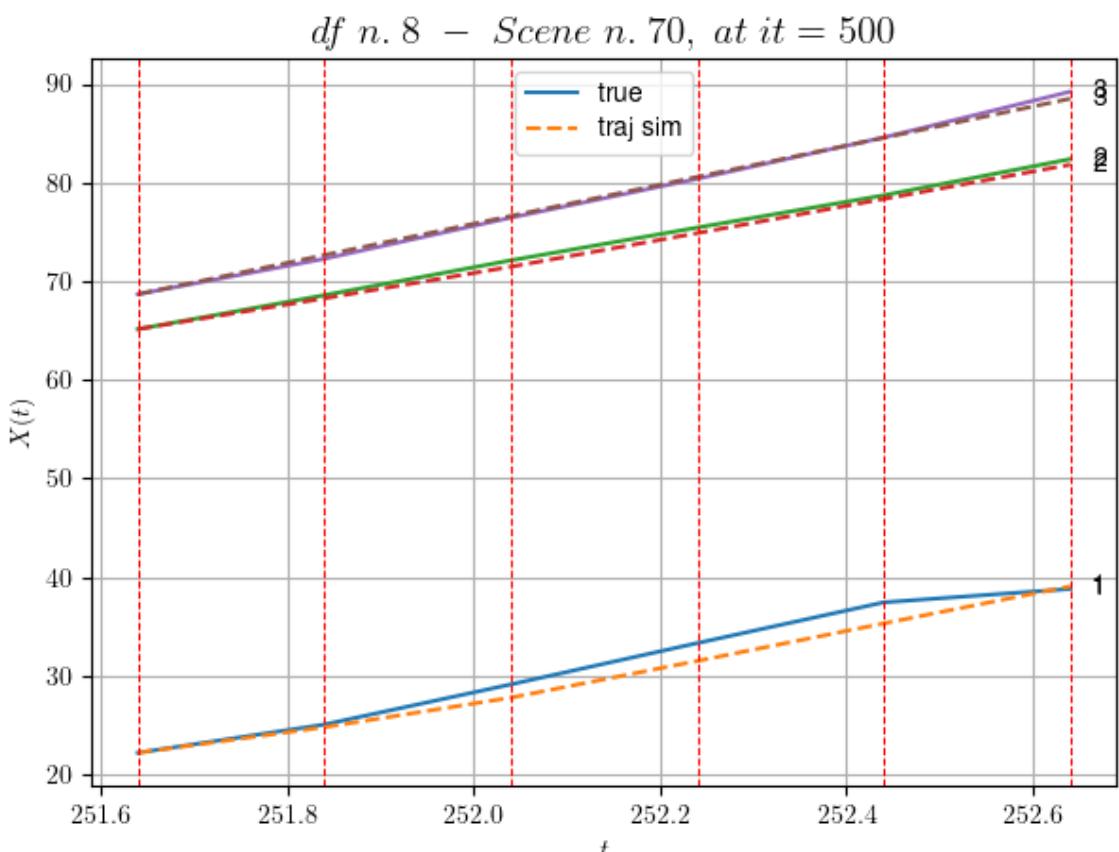
- Time interval n.2: [252.04, 252.24]
* y_true: [20.93040622 16.61174803]
* v_ann: [18.608125686645508, 17.044851303100586, 1
9.82490608802427]

- Time interval n.3: [252.24, 252.44]
* y_true: [20.66049541 16.35178592]
* v_ann: [19.04644203186035, 17.314620971679688, 1
9.82490608802427]

- Time interval n.4: [252.44, 252.64]
* y_true: [6.80019415 18.37232882]
* v_ann: [18.807092666625977, 17.387271881103516, 1
9.82490608802427]

* err= 0.6564791901534157
* Learning rate NN = 0.0003874204121530056
* diff = 0.037541390557382925

```



For scene 70/79

```

* use LR_NN=0.001 with err=36.77375344012494 at it=24
* v0_scn_mean = 20.43541126590321
* MAE = 0.6564791901534157

```

```
=====
=====
```

df n.8, scene n.71/79

```
=====
=====
```

We have 3 time intervals inside [290.84,291.44]

- Time interval n.0: [290.84, 291.04]
  - \* y\_true: [10.67508652 21.71084933]
  - \* v\_ann: [16.10334014892578, 17.641143798828125, 2 5.378244279774343]

```

```

- Time interval n.1: [291.04, 291.24]
  - \* y\_true: [ 9.47510968 18.71084105]
  - \* v\_ann: [15.632993698120117, 16.76032257080078, 2 5.378244279774343]

```

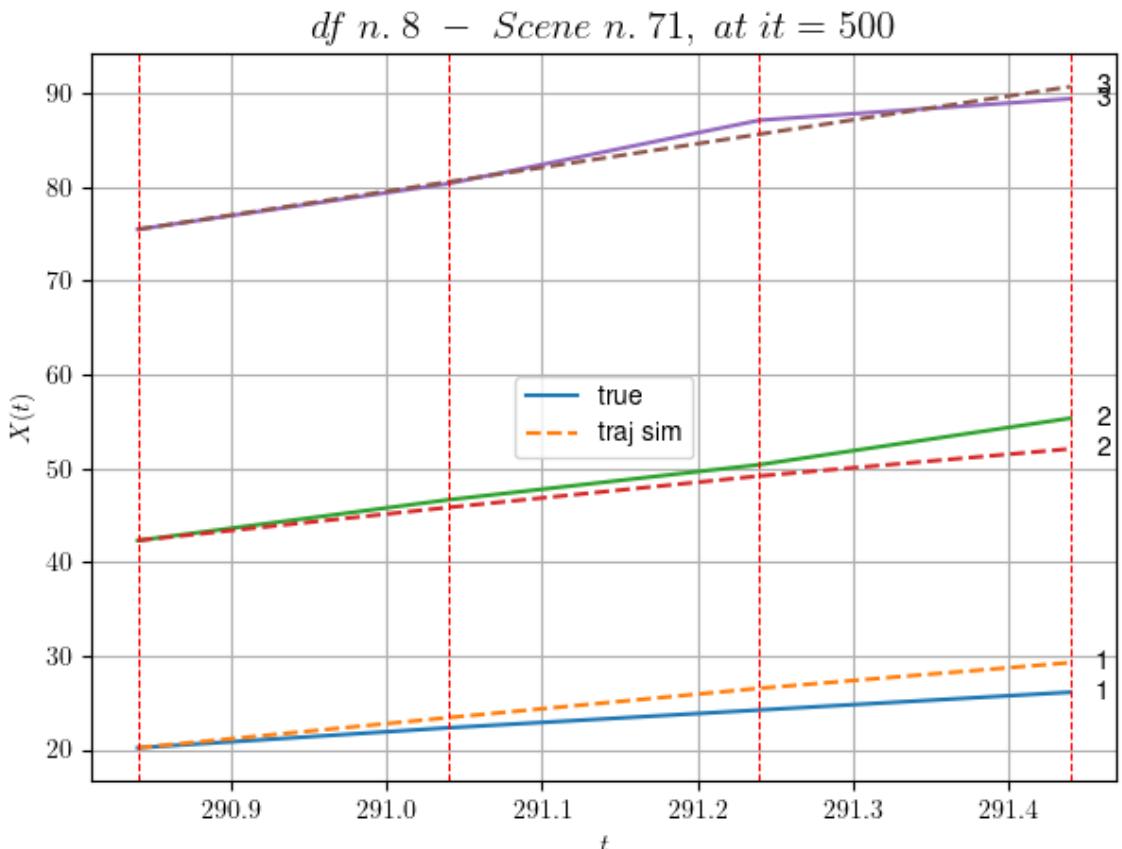
```

- Time interval n.2: [291.24, 291.44]
  - \* y\_true: [ 9.47510968 24.76138307]
  - \* v\_ann: [13.681695938110352, 14.443869590759277, 2 5.378244279774343]

```

```

- \* err= 2.7708100191757565
- \* Learning rate NN = 0.0005904899444431067
- \* diff = 0.00712053510455668



```
For scene 71/79
* use LR_NN=0.001 with err=2.244618443709243 at it=24
* v0_scn_mean = 25.6555494154813
* MAE = 2.724386812441995
```

```
=====
=====
```

```
df n.8, scene n.72/79
```

```
=====
=====
```

```
We have 5 time intervals inside [350.64,351.64]
```

```
- Time interval n.0: [350.64, 350.84]
 * y_true: [14.24956692 9.34769854]
 * v_ann: [16.469200134277344, 17.827665328979492, 2
4.017556031657975]
```

```


```

```
- Time interval n.1: [350.84, 351.04]
 * y_true: [4.06677119 24.77080184]
 * v_ann: [15.117494583129883, 15.209943771362305, 2
4.017556031657975]
```

```


```

```
- Time interval n.2: [351.04, 351.24]
 * y_true: [15.46321179 18.97073364]
 * v_ann: [14.884930610656738, 14.847652435302734, 2
4.017556031657975]
```

```


```

```
- Time interval n.3: [351.24, 351.44]
 * y_true: [19.89069297 18.71086293]
 * v_ann: [15.542277336120605, 16.043516159057617, 2
4.017556031657975]
```

```

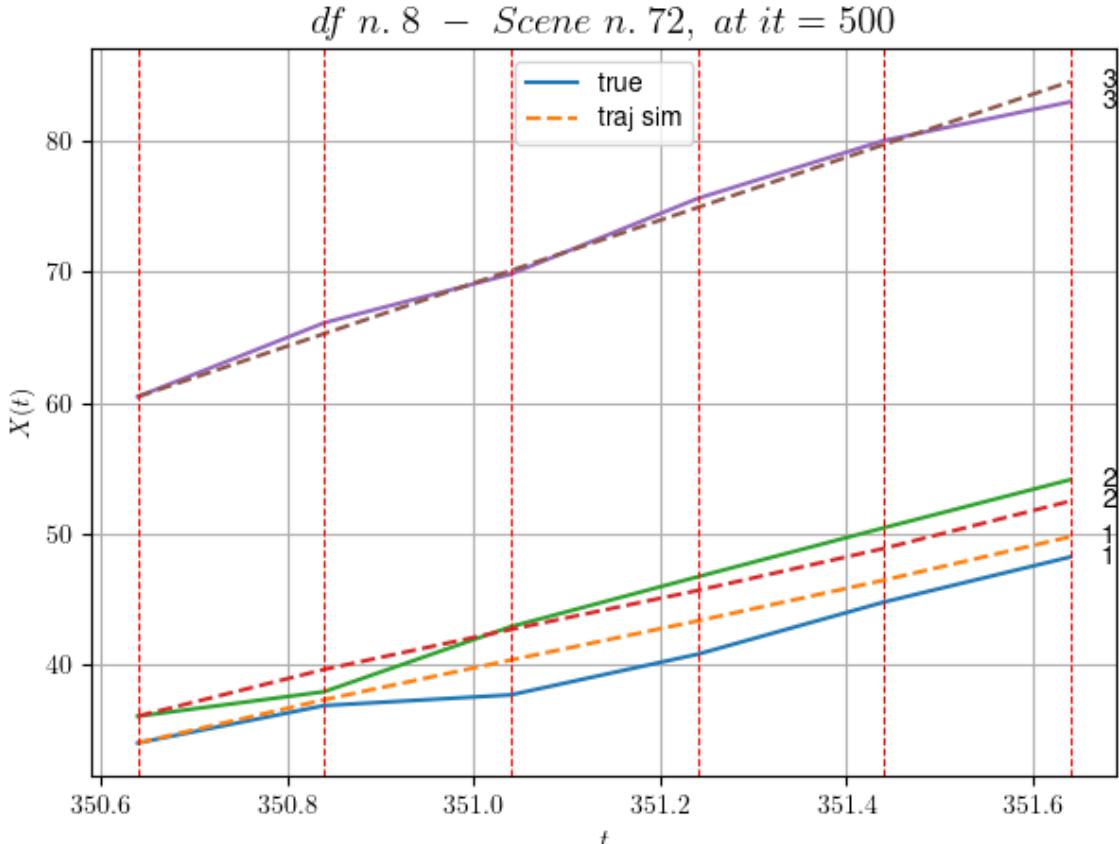

```

```
- Time interval n.4: [351.44, 351.64]
 * y_true: [17.2007296 18.34097485]
 * v_ann: [16.561859130859375, 18.049631118774414, 2
4.017556031657975]
```

```


```

```
* err= 1.7619738562306628
* Learning rate NN = 0.0003874204121530056
* diff = 0.015603736054151884
```



For scene 72/79

- \* use LR\_NN=0.001 with err=9.322647200467577 at it=24
- \* v0\_scn\_mean = 24.376502401159794
- \* MAE = 1.7619738562306628

---



---

df n.8, scene n.73/79

---



---

We have 3 time intervals inside [368.84, 369.44]

- Time interval n.0: [368.84, 369.04]
  - \* y\_true: [17.45059381 8.87536169]
  - \* v\_ann: [14.633101463317871, 13.000186920166016, 17.01201200082]

---



---

- Time interval n.1: [369.04, 369.24]
  - \* y\_true: [23.11801305 8.05829994]
  - \* v\_ann: [14.647061347961426, 12.77105712890625, 17.01201200082]

---



---

- Time interval n.2: [369.24, 369.44]
  - \* y\_true: [ 6.12528304 15.69072344]
  - \* v\_ann: [10.570672988891602, 13.58047103881836, 17.01201200082]

---

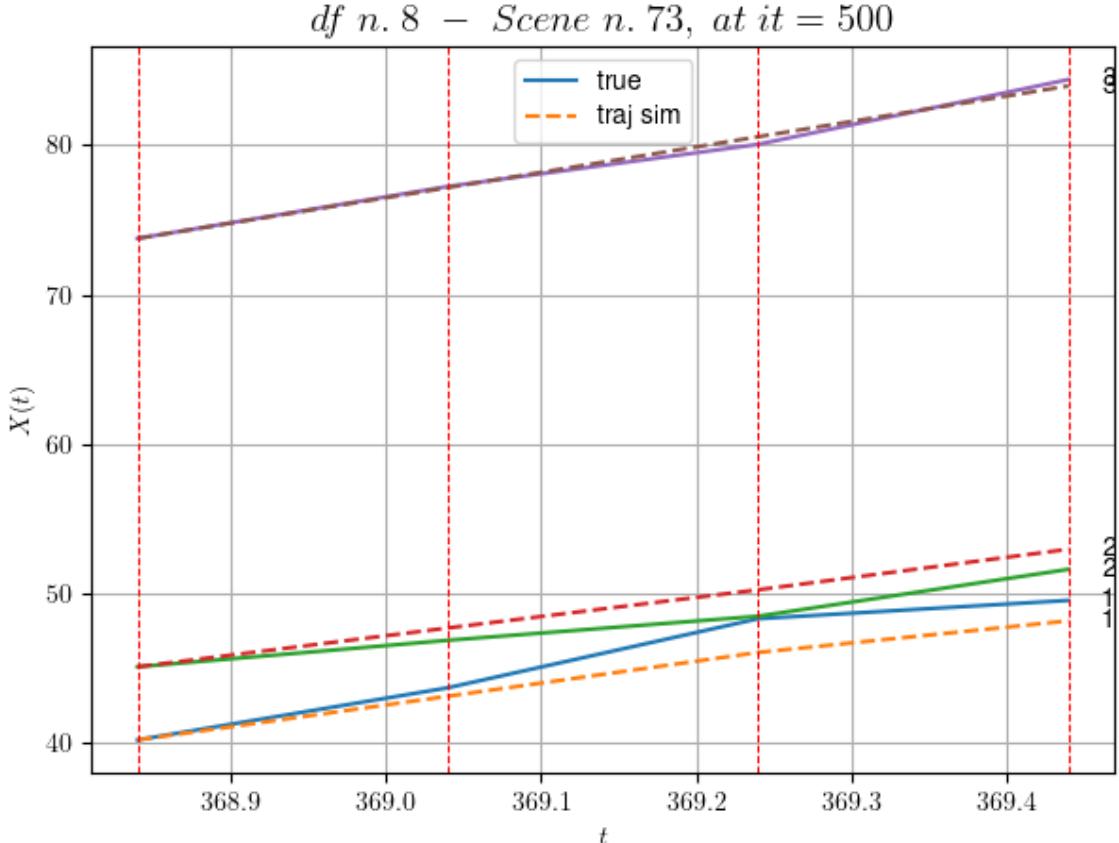


---

```

* err= 1.1126623208415403
* Learning rate NN = 0.0002952449722215533
* diff = 0.004874962956355144

```



For scene 73/79

```

* use LR_NN=0.0005 with err=17.565542269057598 at it=24
* v0_scn_mean = 17.7912906976385
* MAE = 1.0153154090727363

```

---

df n.8, scene n.74/79

---

We have 2 time intervals inside [414.44, 414.84]

- Time interval n.0: [414.44, 414.64]
  - \* y\_true: [25.58017481 23.93124381]
  - \* v\_ann: [22.03767967224121, 21.475116729736328, 14.740228637605293]

- Time interval n.1: [414.64, 414.84]
  - \* y\_true: [28.7103211 9.12051681]
  - \* v\_ann: [22.316650390625, 21.53515625, 14.740228637605293]

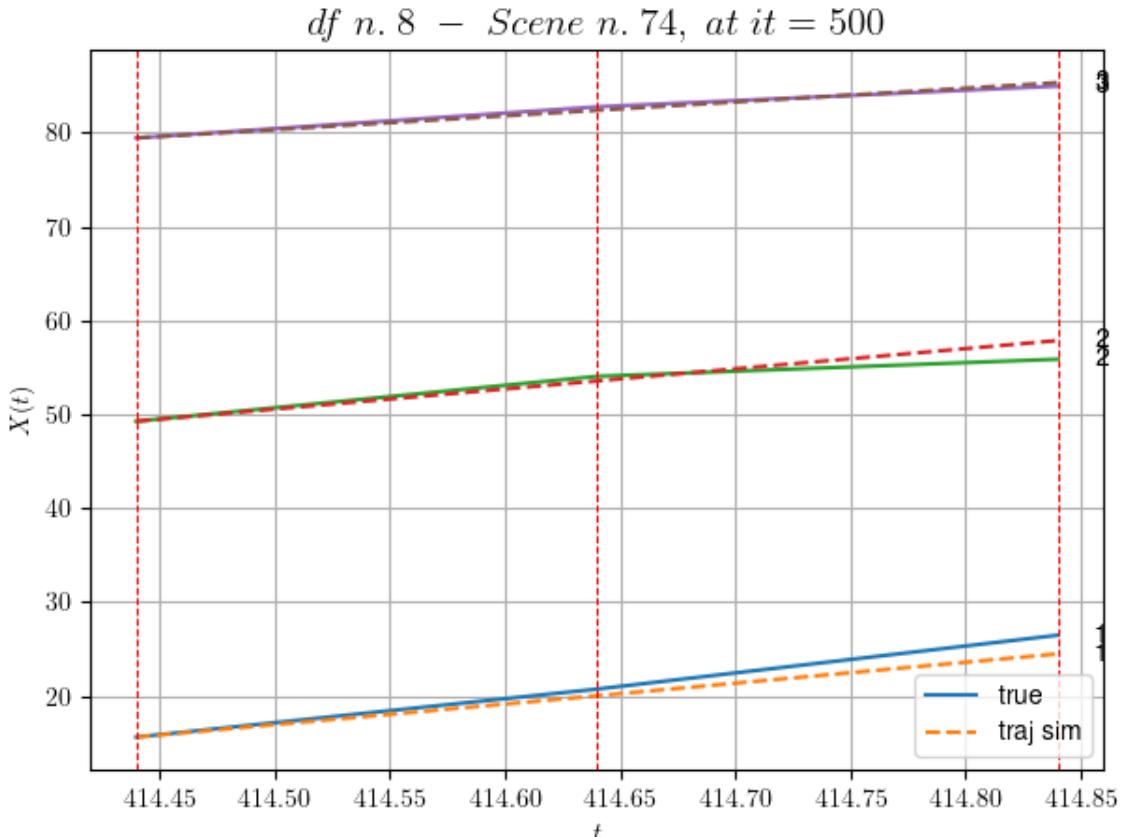
---

```

* err= 0.9927871919318396
* Learning rate NN = 3.6449993785936385e-05

```

\* diff = 0.0009837672940798958



For scene 74/79

\* use LR\_NN=5e-05 with err=6.057406588191999 at it=24  
 \* v0\_scn\_mean = 15.655814234218616  
 \* MAE = 0.9927871919318396

---



---

df n.8, scene n.75/79

---



---

We have 5 time intervals inside [477.84, 478.84]

- Time interval n.0: [477.84, 478.04]
  - \* y\_true: [17.90015387 15.74042221]
  - \* v\_ann: [18.884870529174805, 19.043912887573242, 21.268159302177597]

---



---

- Time interval n.1: [478.04, 478.24]
  - \* y\_true: [18.02021575 17.32056356]
  - \* v\_ann: [18.26865577697754, 18.141971588134766, 21.268159302177597]

---



---

- Time interval n.2: [478.24, 478.44]
  - \* y\_true: [20.95033635 22.3908747 ]
  - \* v\_ann: [18.125782012939453, 17.924711227416992, 21.268159302177597]

```

 - Time interval n.3: [478.44, 478.64]

 * y_true: [19.80040923 17.17076636]

 * v_ann: [19.14700698852539, 19.482315063476562, 2

1.268159302177597]

```

```

 - Time interval n.4: [478.64, 478.84]

 * y_true: [18.07046469 19.89107551]

 * v_ann: [18.884597778320312, 19.10394859313965, 2

1.268159302177597]

```

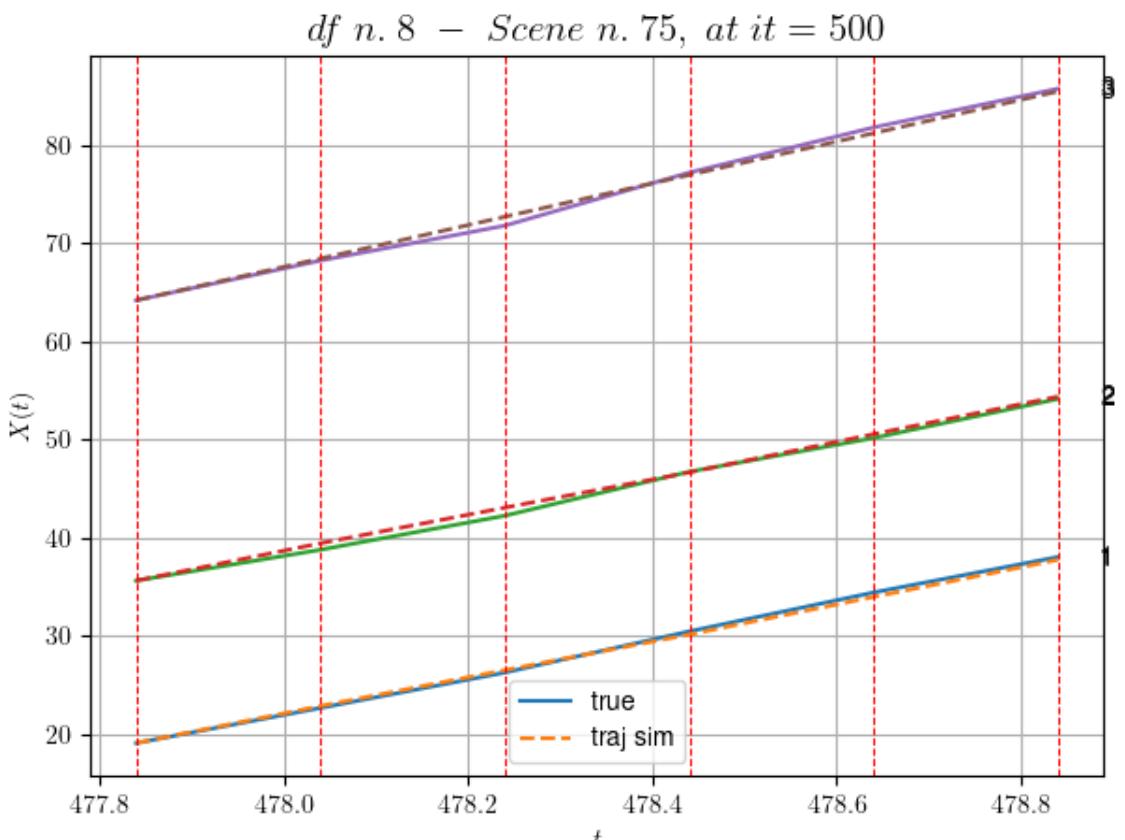
```

* err= 0.17602790256880227

* Learning rate NN = 0.0001937102060765028

* diff = 8.562371052273088e-05

```



For scene 75/79

```

* use LR_NN=0.0005 with err=15.742478864108493 at it=24
* v0_scn_mean = 21.792069352005868
* MAE = 0.17602790256880227

```

---



---

df n.8, scene n.76/79

---



---

```

=====

=====

We have 2 time intervals inside [522.64,523.04]

- Time interval n.0: [522.64, 522.84]

```

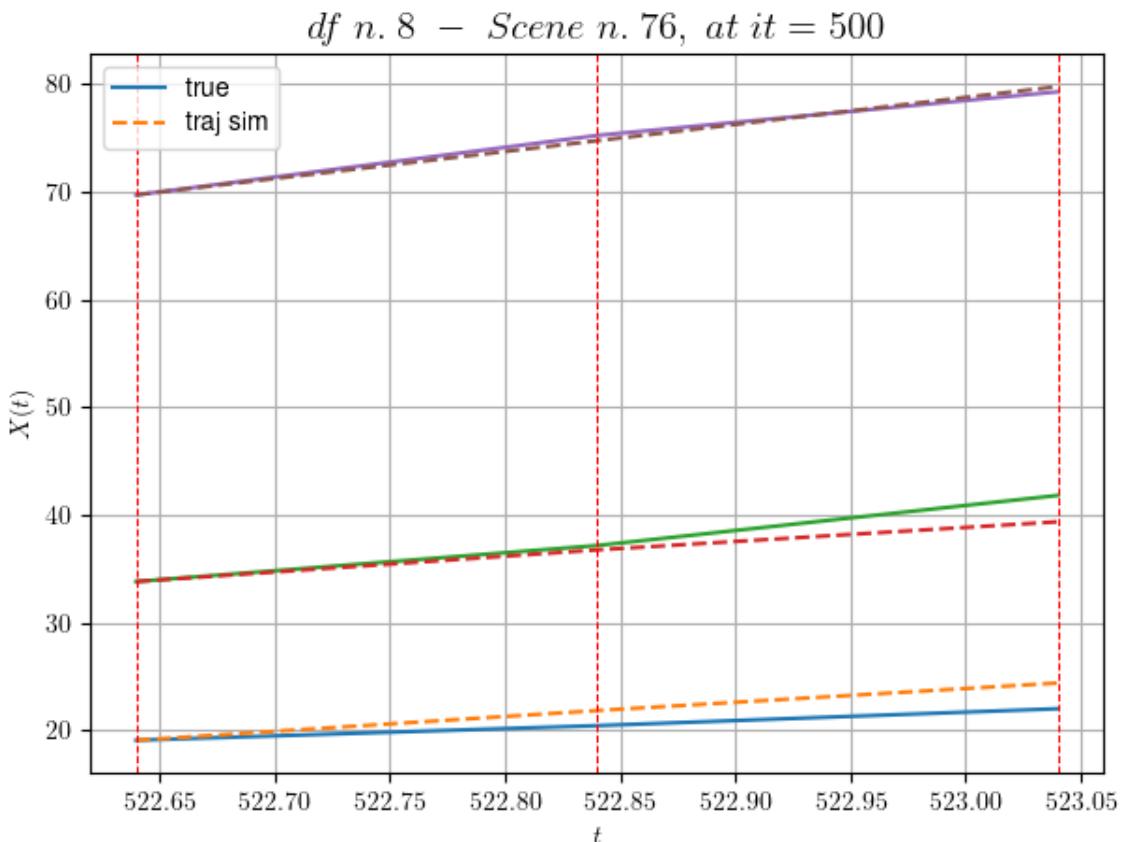
```

* y_true: [6.78505349 16.71042372]
* v_ann: [13.783373832702637, 14.689223289489746, 2
5.155972882595005]

- Time interval n.1: [522.84, 523.04]
* y_true: [7.85007105 23.28071684]
* v_ann: [12.792567253112793, 13.060935974121094, 2
5.155972882595005]

* err= 1.5882778975585403
* Learning rate NN = 0.00036449998151510954
* diff = 0.0004194775451740185

```



For scene 76/79

```

* use LR_NN=0.0005 with err=0.8952160823516663 at it=24
* v0_scn_mean = 25.446614292152407
* MAE = 1.5635488792405392
=====
```

df n.8, scene n.77/79

```

=====
We have 7 time intervals inside [593.04,594.44]
- Time interval n.0: [593.04, 593.24]
* y_true: [18.14041096 18.46062677]
* v_ann: [18.969369888305664, 19.274620056152344, 2
0.297836048725387]
```

```


 - Time interval n.1: [593.24, 593.44]
 * y_true: [15.67042287 23.16095213]
 * v_ann: [18.811922073364258, 18.977924346923828, 2
0.297836048725387]

 - Time interval n.2: [593.44, 593.64]
 * y_true: [13.25043489 21.00101152]
 * v_ann: [19.209985733032227, 19.177879333496094, 2
0.297836048725387]

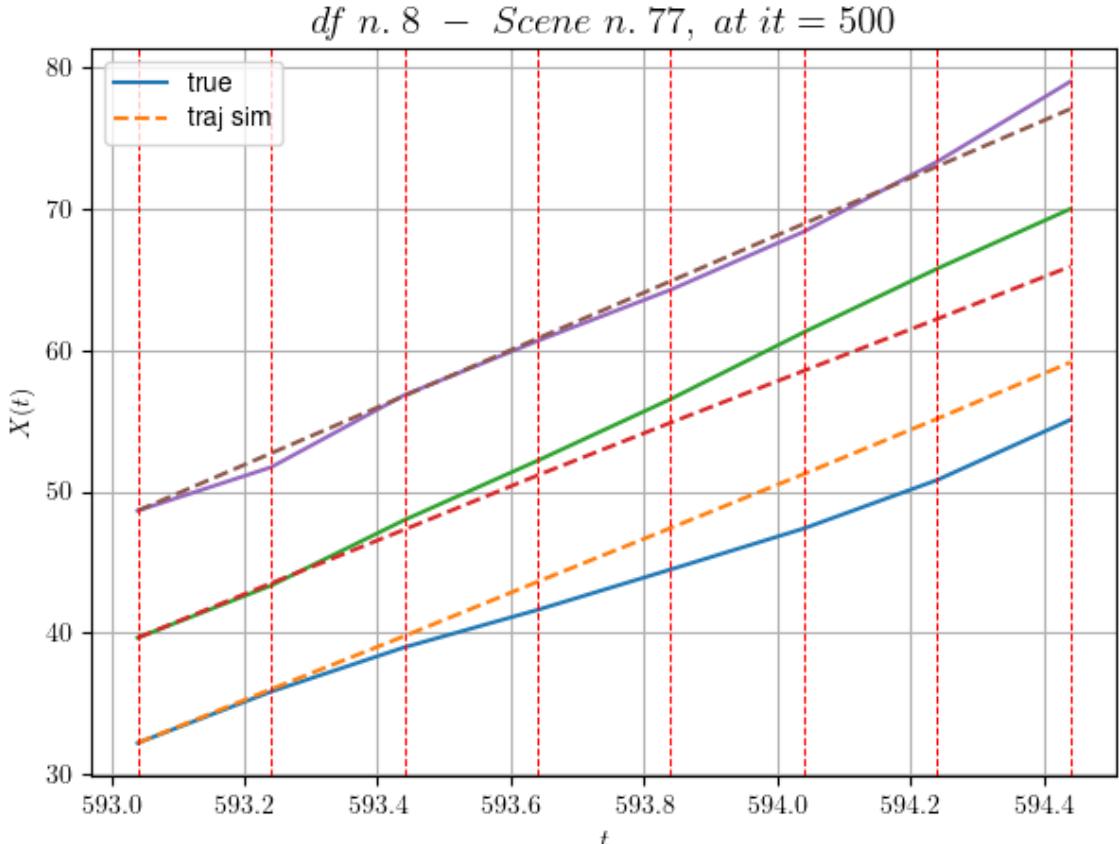
 - Time interval n.3: [593.64, 593.84]
 * y_true: [14.30052292 21.80126526]
 * v_ann: [19.037891387939453, 18.660669326782227, 2
0.297836048725387]

 - Time interval n.4: [593.84, 594.04]
 * y_true: [14.50059166 23.66159236]
 * v_ann: [19.116653442382812, 18.355836868286133, 2
0.297836048725387]

 - Time interval n.5: [594.04, 594.24]
 * y_true: [17.13492662 22.4617536]
 * v_ann: [19.519784927368164, 18.314727783203125, 2
0.297836048725387]

 - Time interval n.6: [594.24, 594.44]
 * y_true: [21.29116558 21.12188145]
 * v_ann: [19.926780700683594, 18.574874877929688, 2
0.297836048725387]

* err= 4.578353318930273
* Learning rate NN = 0.00025418648147024214
* diff = 0.0066311270565006066
```



For scene 77/79

- \* use LR\_NN=0.001 with err=29.82036372423049 at it=24
- \* v0\_scn\_mean = 20.879965450196085
- \* MAE = 4.529652811328335

---



---

df n.8, scene n.78/79

---



---

We have 4 time intervals inside [256.44, 257.24]

- Time interval n.0: [256.44, 256.64]
  - \* y\_true: [ 7.48303167 10.07767618 21.73093279]
  - \* v\_ann: [12.154632568359375, 13.824183464050293, 1  
5.625202178955078, 17.104258674666177]

---



---

- Time interval n.1: [256.64, 256.84]
  - \* y\_true: [13.09283525 13.17831107 21.42106847]
  - \* v\_ann: [16.070945739746094, 16.332332611083984, 1  
5.11286449432373, 17.104258674666177]

---



---

- Time interval n.2: [256.84, 257.04]
  - \* y\_true: [11.5255681 16.82586504 17.99104223]
  - \* v\_ann: [16.154644012451172, 16.236486434936523, 1  
5.292290687561035, 17.104258674666177]

---



---

```

- Time interval n.3: [257.04, 257.24]

 * y_true: [10.66053629 16.53589178 24.03163218]

 * v_ann: [16.395553588867188, 16.101083755493164, 1

 5.20382308959961, 17.104258674666177]

```

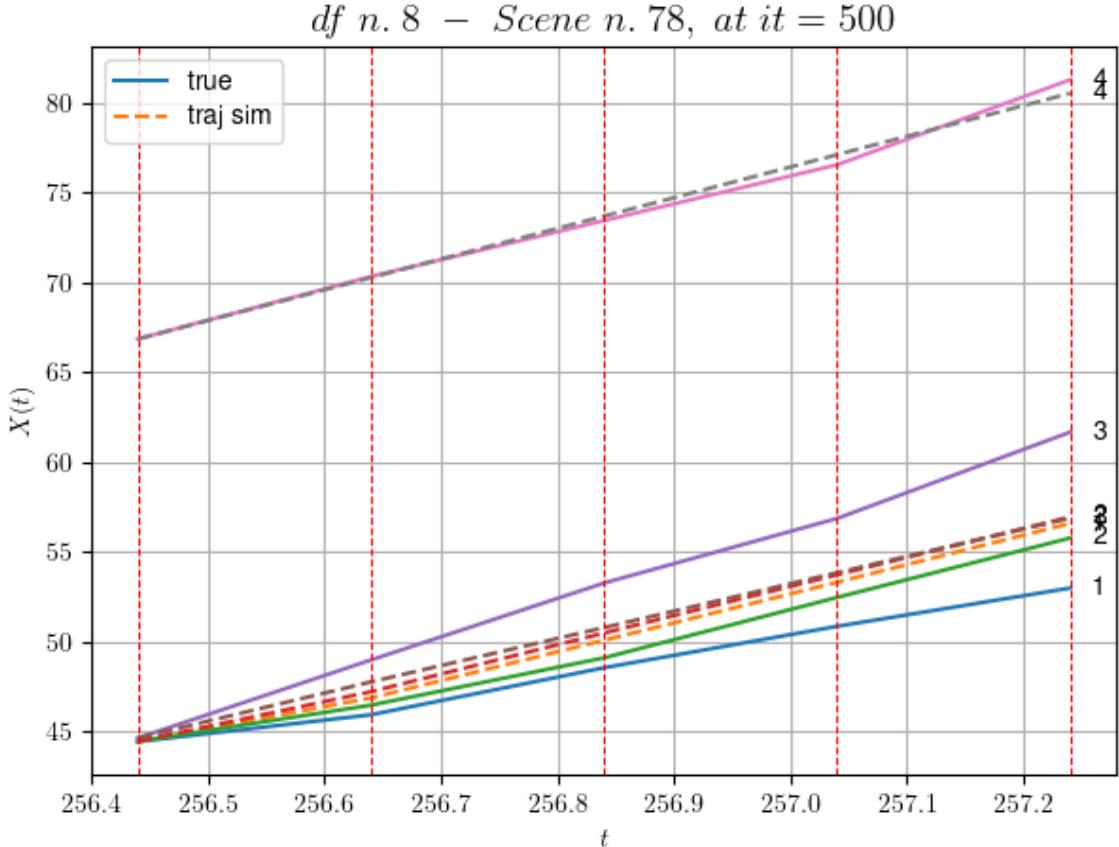
```

* err= 3.4165596531899585

* Learning rate NN = 0.000478296831715852

* diff = 0.0005606712787784573

```



For scene 78/79

```

* use LR_NN=0.001 with err=17.71723176680528 at it=24
* v0_scn_mean = 18.1358760162462
* MAE = 3.392097800189908

```

For df=8 with 79 scenes, time taken: 1652.19

```

```

```

```

```

```

```

```

In df n.9/10 we have 33 scenes

df n.9, scene n.0/33

```
=====
```

We have 5 time intervals inside [15.40,16.40]

```
- Time interval n.0: [15.40, 15.60]
```

```
 * y_true: [30.73739248]
```

```
 * v_ann: [33.10611343383789, 28.380185417450623]
```

```

- Time interval n.1: [15.60, 15.80]

* y_true: [35.33215767]

* v_ann: [31.944021224975586, 28.380185417450623]

```

```

- Time interval n.2: [15.80, 16.00]

* y_true: [26.52685309]

* v_ann: [28.82243537902832, 28.380185417450623]

```

```

- Time interval n.3: [16.00, 16.20]

* y_true: [31.26795305]

* v_ann: [30.240581512451172, 28.380185417450623]

```

```

- Time interval n.4: [16.20, 16.40]

* y_true: [29.78305951]

* v_ann: [29.610136032104492, 28.380185417450623]

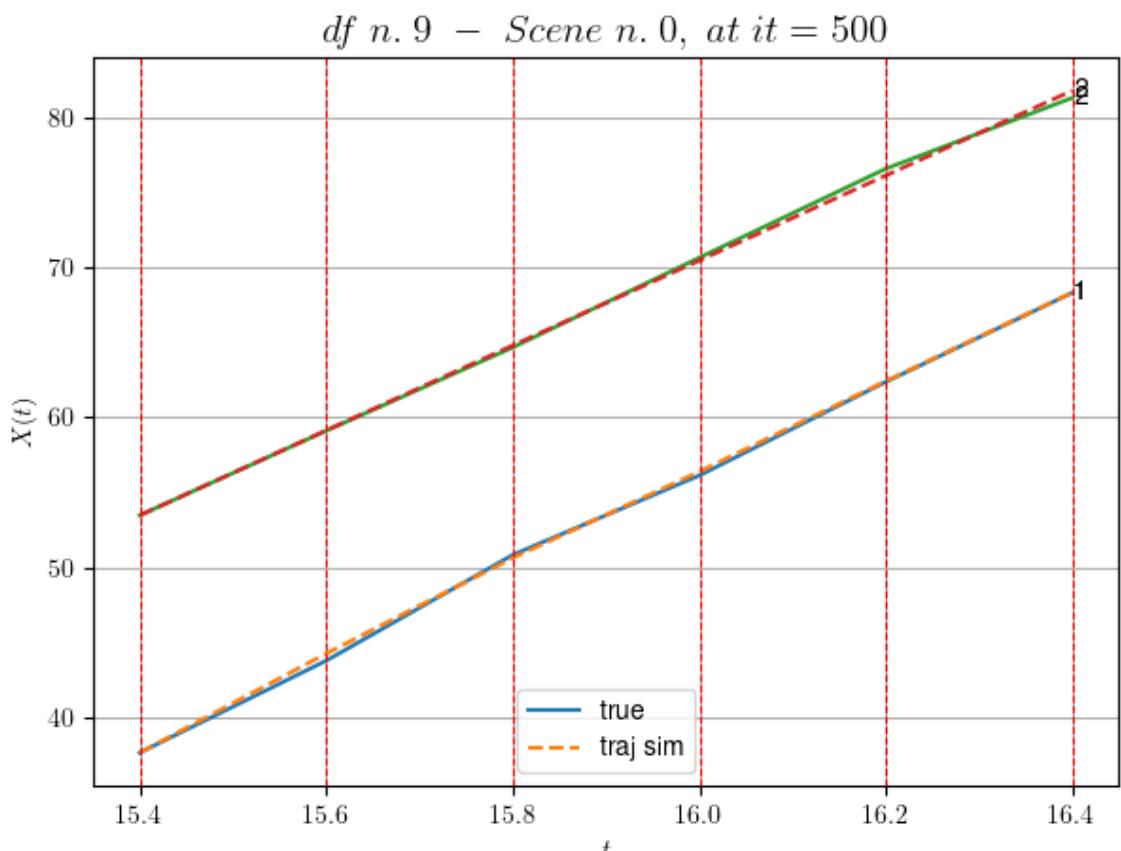
```

```

* err= 0.06926591536328533

* Learning rate NN = 1.9371018424862996e-05

* diff = 7.64603114552509e-05
```



For scene 0/33

```

* use LR_NN=5e-05 with err=0.56922737164018 at it=24
* v0_scn_mean = 28.44497800074018

```

\* MAE = 0.06921684008829478

---



---

df n.9, scene n.1/33

---



---

We have 2 time intervals inside [19.80,20.20]

- Time interval n.0: [19.80, 20.00]
    - \* y\_true: [33.54113565]
    - \* v\_ann: [30.845396041870117, 39.645706027344005]
- 

- Time interval n.1: [20.00, 20.20]

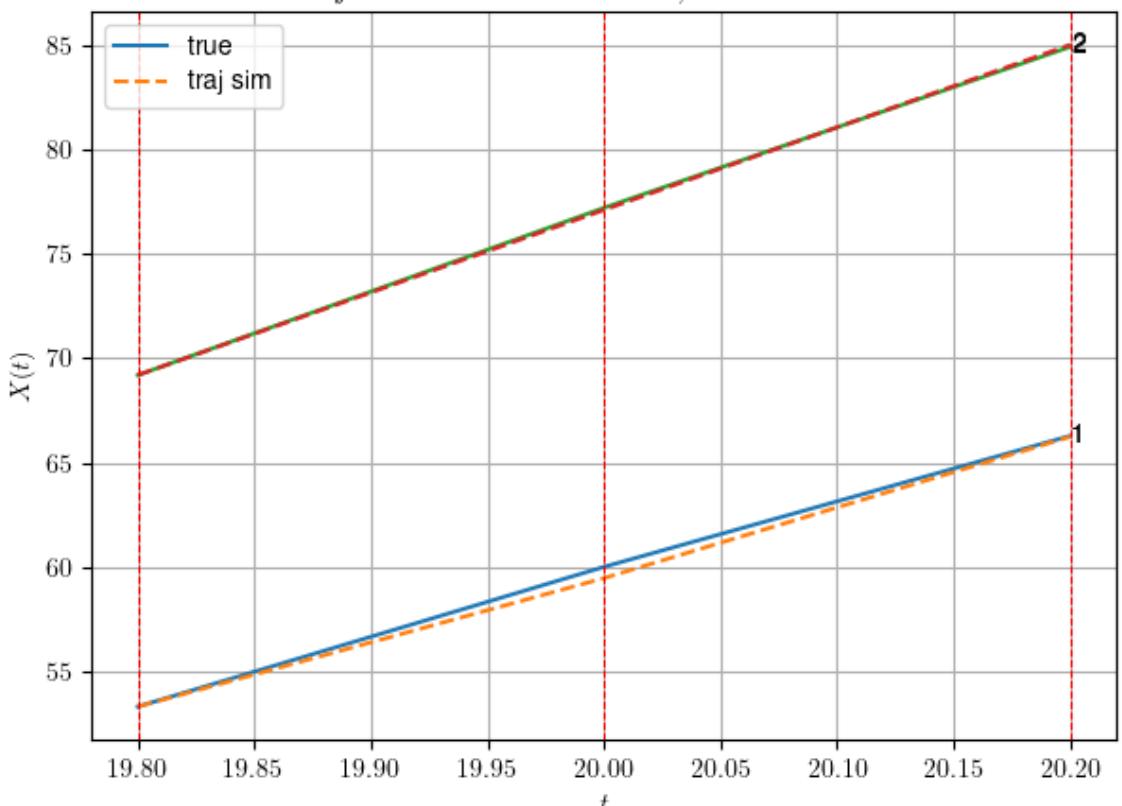
- \* y\_true: [31.45149299]
  - \* v\_ann: [33.921810150146484, 39.645706027344005]
- 

\* err= 0.05217802805381668

\* Learning rate NN = 7.289998757187277e-05

\* diff = 5.47914943339195e-06

*df n. 9 – Scene n. 1, at it = 500*



For scene 1/33

\* use LR\_NN=0.0001 with err=3.091232833692875 at it=24

\* v0\_scn\_mean = 39.259877786324026

\* MAE = 0.05149580326759795

---



---

```
df n.9, scene n.2/33
```

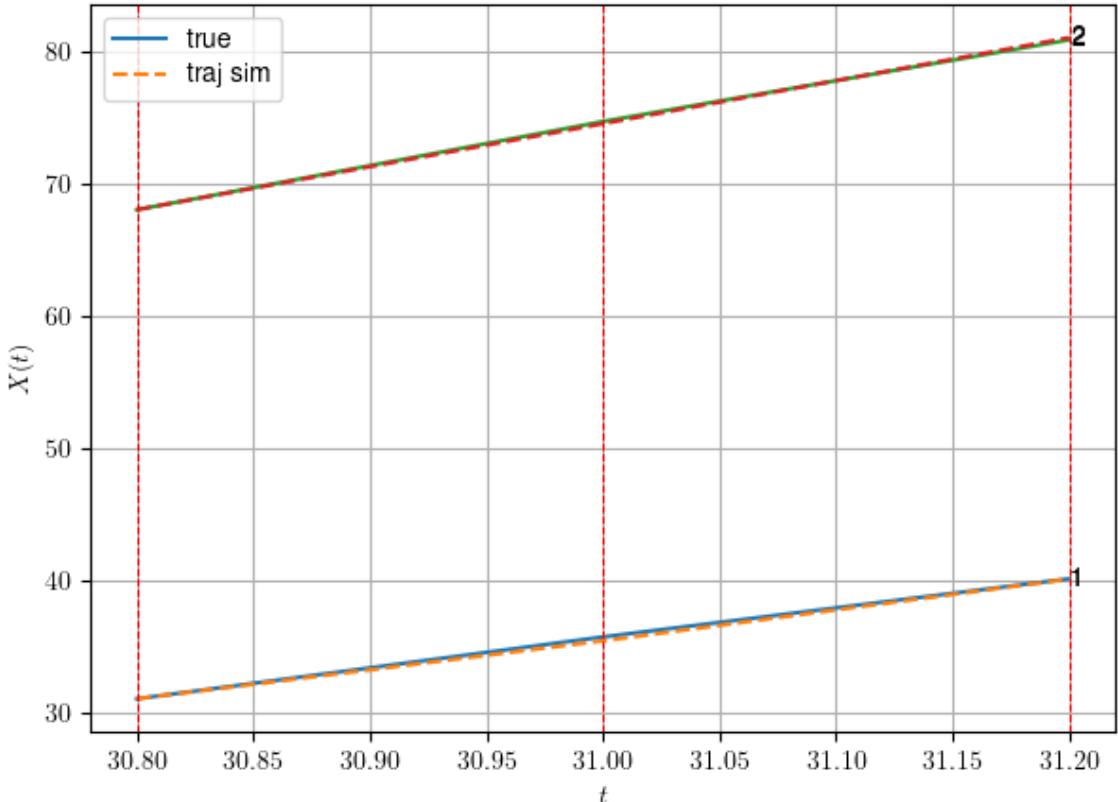
---



---

We have 2 time intervals inside [30.80,31.20]  
 \* err= 0.023562425223306725  
 \* Learning rate NN = 4.499999704421498e-05  
 \* diff = 8.332111695874556e-07

*df n. 9 – Scene n. 2, at it = 250*



For scene 2/33

\* use LR\_NN=5e-05 with err=0.21253625702160478 at it=24  
 \* v0\_scn\_mean = 32.33304952646815  
 \* MAE = 0.022908021068587137

---



---

```
df n.9, scene n.3/33
```

---



---

We have 5 time intervals inside [36.60,37.60]

- Time interval n.0: [36.60, 36.80]
  - \* y\_true: [22.87949769]
  - \* v\_ann: [22.85577392578125, 29.981948107113695]

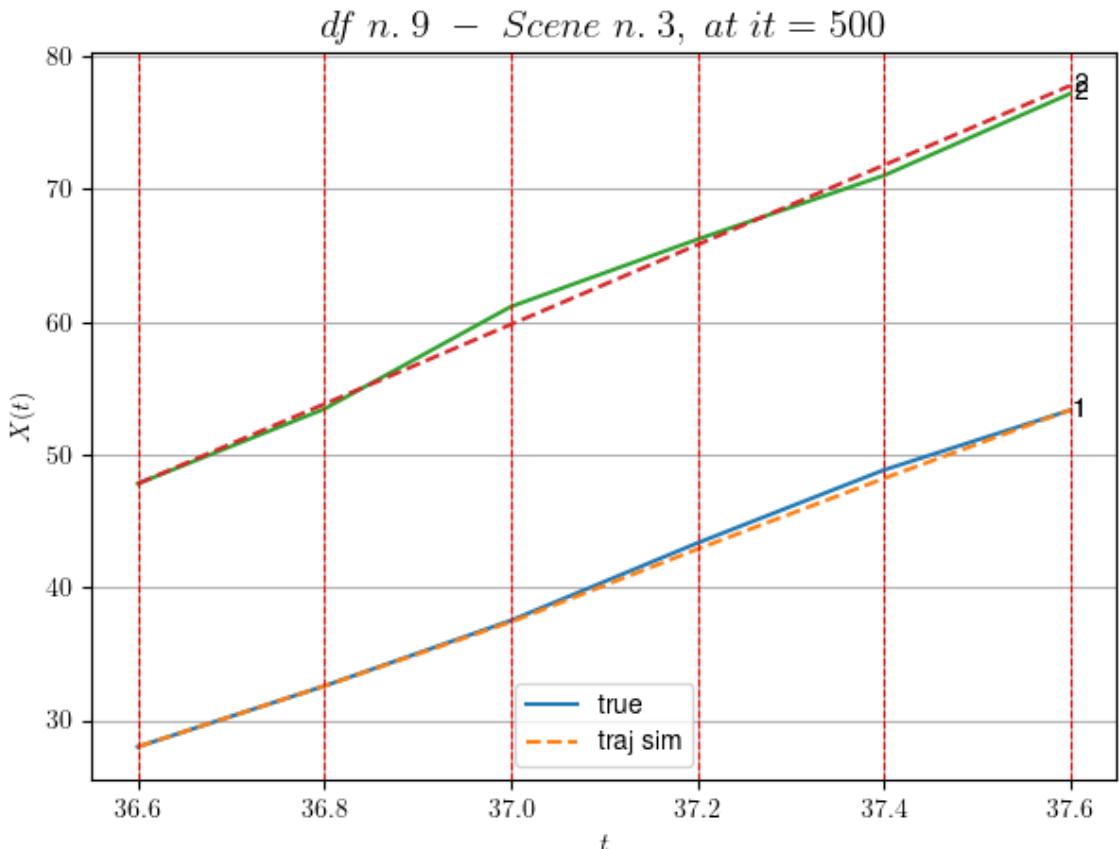
- Time interval n.1: [36.80, 37.00]
  - \* y\_true: [24.659198]
  - \* v\_ann: [24.11391830444336, 29.981948107113695]

```
- Time interval n.2: [37.00, 37.20]
* y_true: [29.18472774]
* v_ann: [27.455970764160156, 29.981948107113695]
```

```
- Time interval n.3: [37.20, 37.40]
* y_true: [27.50021757]
* v_ann: [26.620742797851562, 29.981948107113695]
```

```
- Time interval n.4: [37.40, 37.60]
* y_true: [22.55082199]
* v_ann: [25.829654693603516, 29.981948107113695]
```

```
* err= 0.30758335365134015
* Learning rate NN = 1.9371018424862996e-05
* diff = 0.00051176600026424201
```



For scene 3/33

```
* use LR_NN=5e-05 with err=0.31751474893900977 at it=24
* v0_scn_mean = 29.982670182828947
* MAE = 0.30645570912764847
```

---



---

df n.9, scene n.4/33

---



---

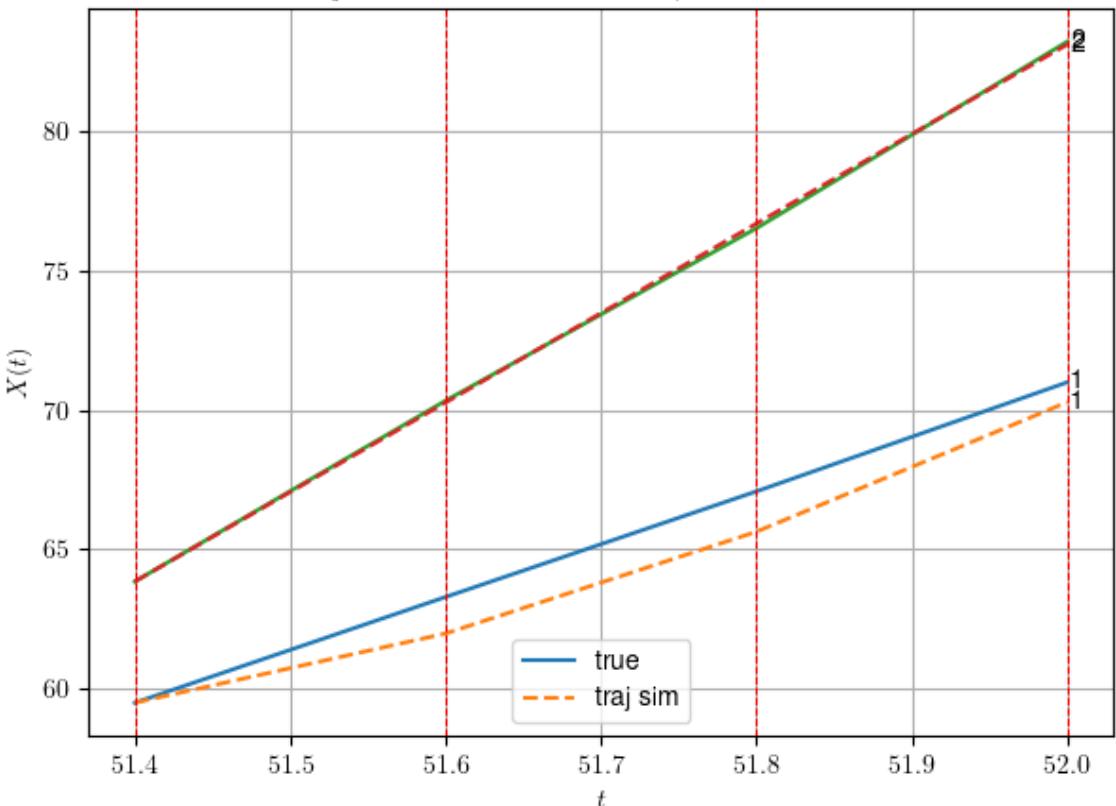
```
=====
We have 3 time intervals inside [51.40,52.00]
- Time interval n.0: [51.40, 51.60]
 * y_true: [18.9890482]
 * v_ann: [12.437639236450195, 32.13226424153484]

- Time interval n.1: [51.60, 51.80]
 * y_true: [18.95651223]
 * v_ann: [18.272510528564453, 32.13226424153484]

- Time interval n.2: [51.80, 52.00]
 * y_true: [19.58186103]
 * v_ann: [23.2531795501709, 32.13226424153484]

* err= 0.5453563834440533
* Learning rate NN = 0.0002952449722215533
* diff = 0.01750219550018717
```

*df n. 9 – Scene n. 4, at it = 500*



For scene 4/33

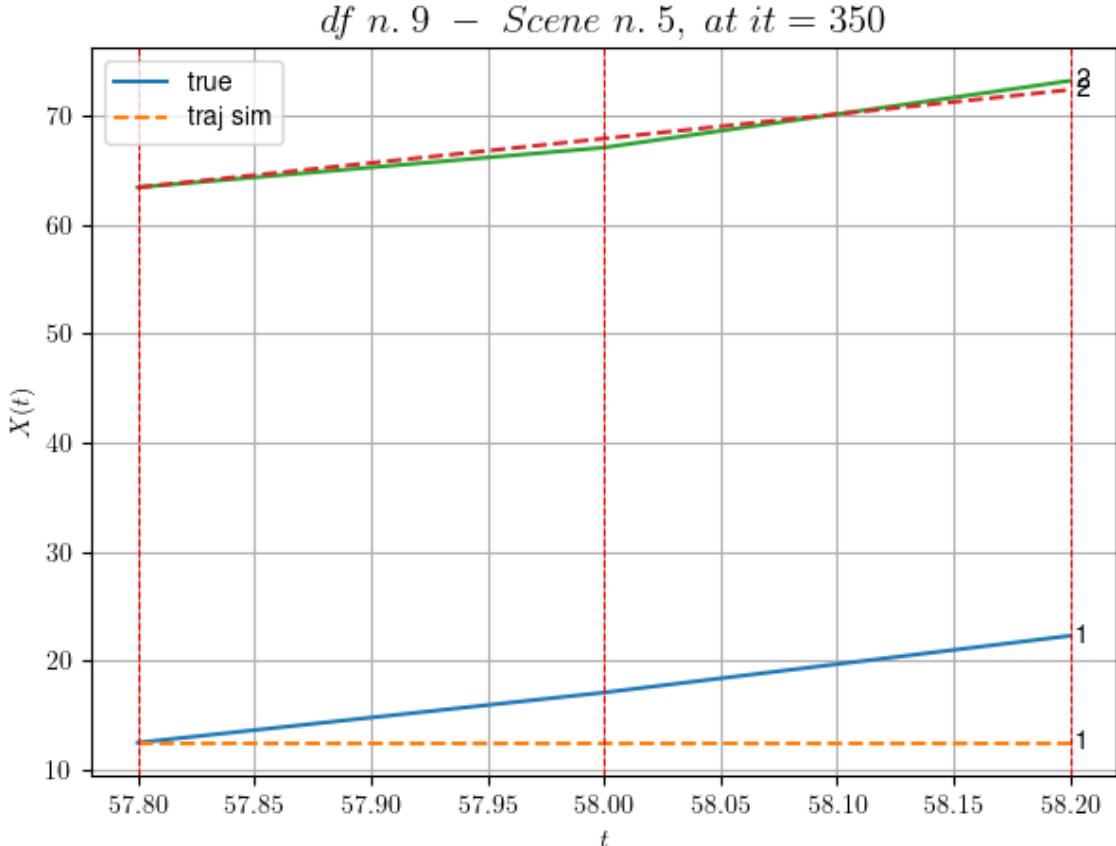
```
* use LR_NN=0.0005 with err=1.3176912687233122 at it=24
* v0_scn_mean = 32.046973671889745
* MAE = 0.5453563834440533
```

=====

=====

df n.9, scene n.5/33

```
=====
=====
We have 2 time intervals inside [57.80,58.20]
* err= 19.78625400782434
* Learning rate NN = 8.099999104160815e-05
* diff = 8.027354070350157e-08
```



```
For scene 5/33
* use LR_NN=0.0001 with err=1.787243708927996 at it=24
* v0_scn_mean = 22.818843268553703
* MAE = 19.763353537057395
```

=====

=====

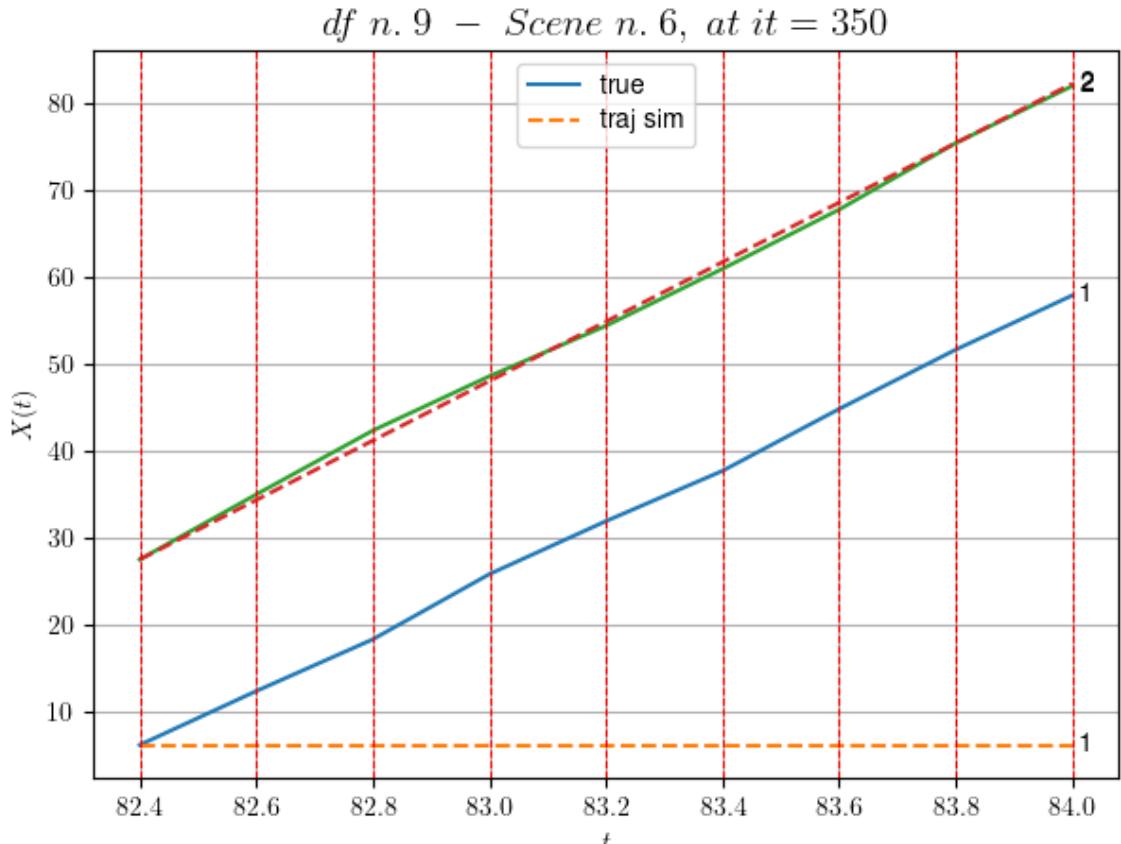
=====

df n.9, scene n.6/33

=====

=====

```
=====
=====
We have 8 time intervals inside [82.40,84.00]
* err= 472.72756131823894
* Learning rate NN = 1.5690524378442205e-05
* diff = 1.1908633723578532e-07
```



For scene 6/33

- \* use LR\_NN=5e-05 with err=7.823737745668399 at it=24
- \* v0\_scn\_mean = 34.0493843175805
- \* MAE = 472.70898232128616

---



---

df n.9, scene n.7/33

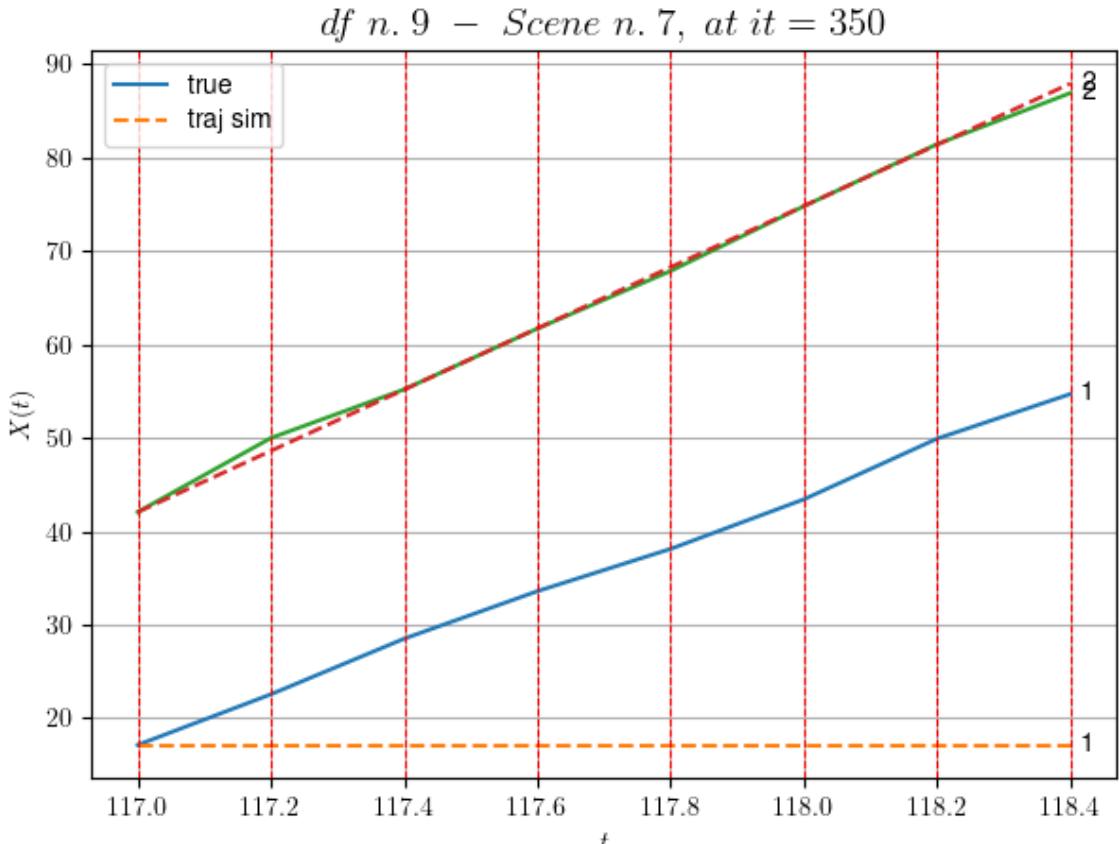
---



---

We have 7 time intervals inside [117.00,118.40]

- \* err= 252.95771480128286
- \* Learning rate NN = 3.874203684972599e-06
- \* diff = 9.268848089050152e-08



For scene 7/33

- \* use LR\_NN=1e-05 with err=2.926406284508015 at it=24
  - \* v0\_scn\_mean = 32.58979409612247
  - \* MAE = 252.935367737158
- 
- 

df n.9, scene n.8/33

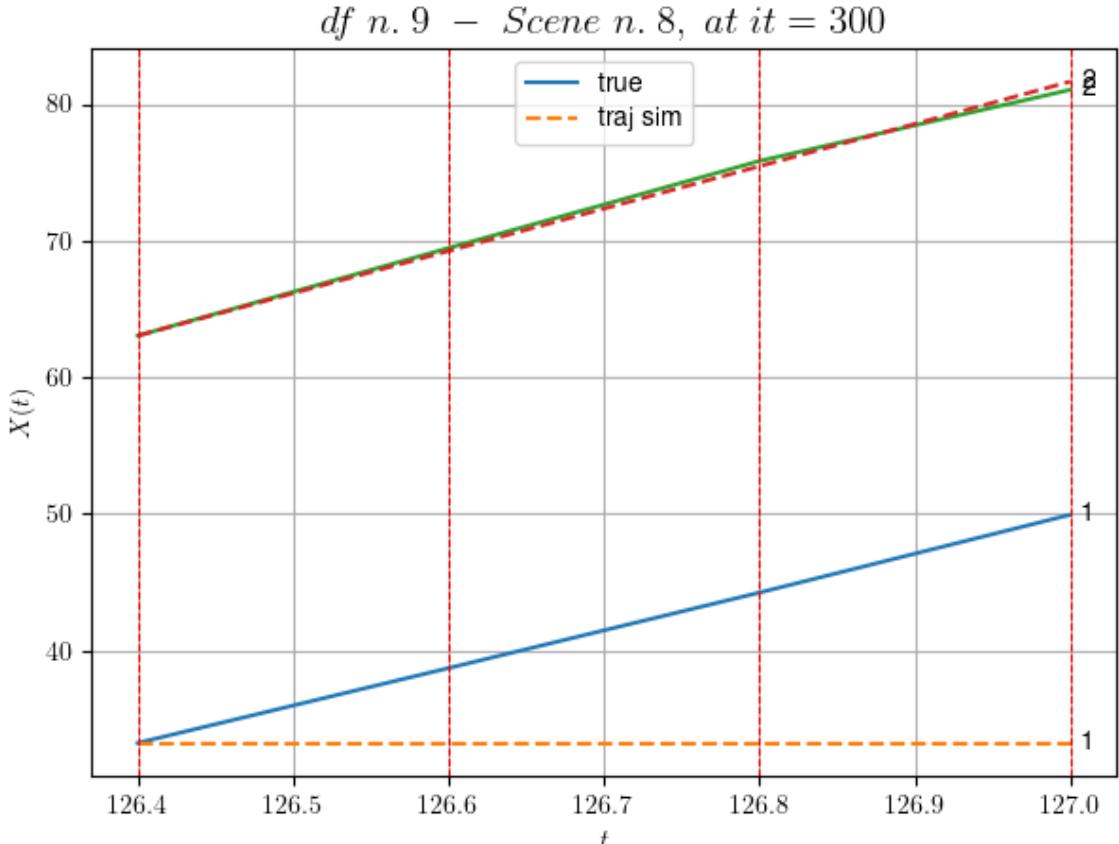
---



---

We have 3 time intervals inside [126.40,127.00]

- \* err= 53.88484871572413
- \* Learning rate NN = 3.6449993785936385e-05
- \* diff = 1.0243616799243682e-07



For scene 8/33

- \* use LR\_NN=5e-05 with err=0.10094377453168833 at it=24
- \* v0\_scn\_mean = 30.94525541890173
- \* MAE = 53.87890308960084

---



---

df n.9, scene n.9/33

---



---

We have 6 time intervals inside [129.80, 131.00]

- Time interval n.0: [129.80, 130.00]
  - \* y\_true: [25.09153851]
  - \* v\_ann: [21.330289840698242, 25.485804967815387]

---

- Time interval n.1: [130.00, 130.20]
  - \* y\_true: [21.96260078]
  - \* v\_ann: [22.11479949951172, 25.485804967815387]

---

- Time interval n.2: [130.20, 130.40]
  - \* y\_true: [20.15999275]
  - \* v\_ann: [24.67483901977539, 25.485804967815387]

---

- Time interval n.3: [130.40, 130.60]
  - \* y\_true: [23.27663555]

\* v\_ann: [23.810157775878906, 25.485804967815387]

---

- Time interval n.4: [130.60, 130.80]

\* y\_true: [24.11460384]

\* v\_ann: [23.57512855529785, 25.485804967815387]

---

- Time interval n.5: [130.80, 131.00]

\* y\_true: [25.18866754]

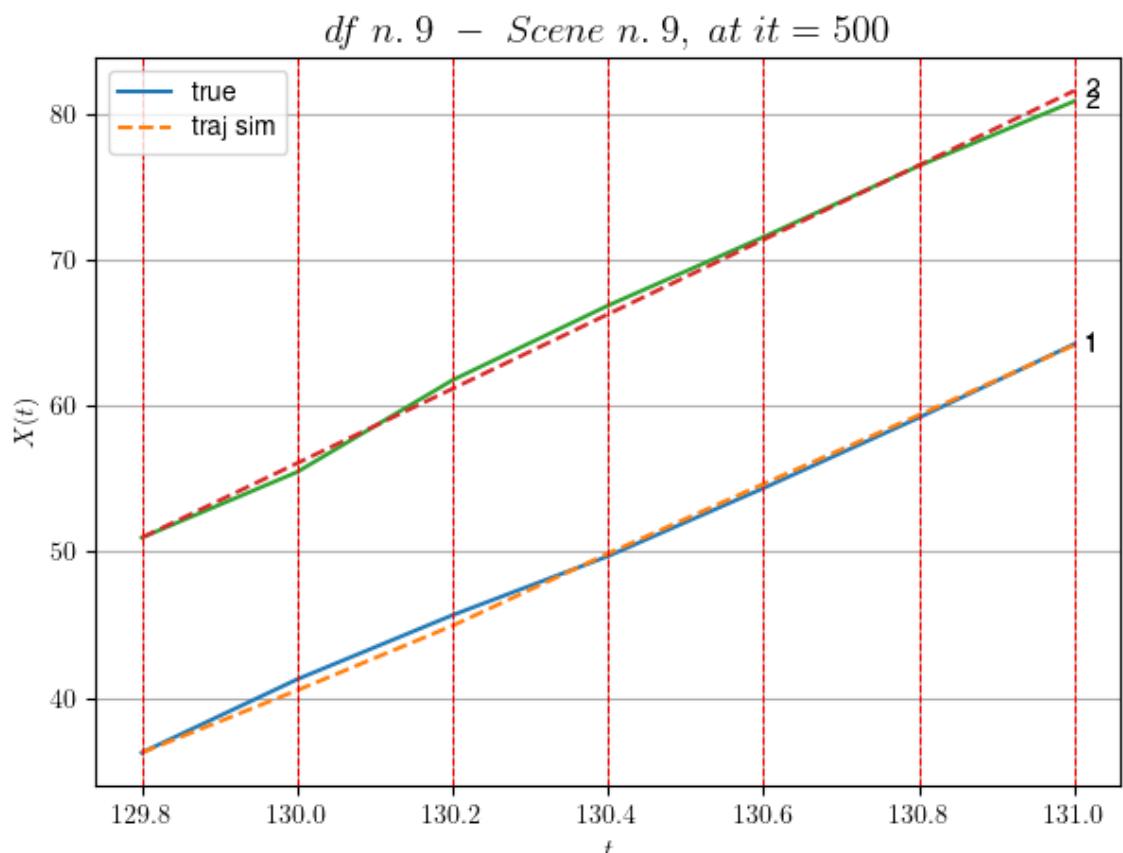
\* v\_ann: [23.91122817993164, 25.485804967815387]

---

\* err= 0.20407438781906873

\* Learning rate NN = 0.00031381050939671695

\* diff = 0.0022149094544026138



For scene 9/33

\* use LR\_NN=0.001 with err=5.671985445795738 at it=24

\* v0\_scn\_mean = 25.66637276906791

\* MAE = 0.185493123508596

---



---

df n.9, scene n.10/33

---



---

We have 2 time intervals inside [140.00,140.40]

- Time interval n.0: [140.00, 140.20]

```
* y_true: [21.21233893]
* v_ann: [23.891510009765625, 22.365188336411514]
```

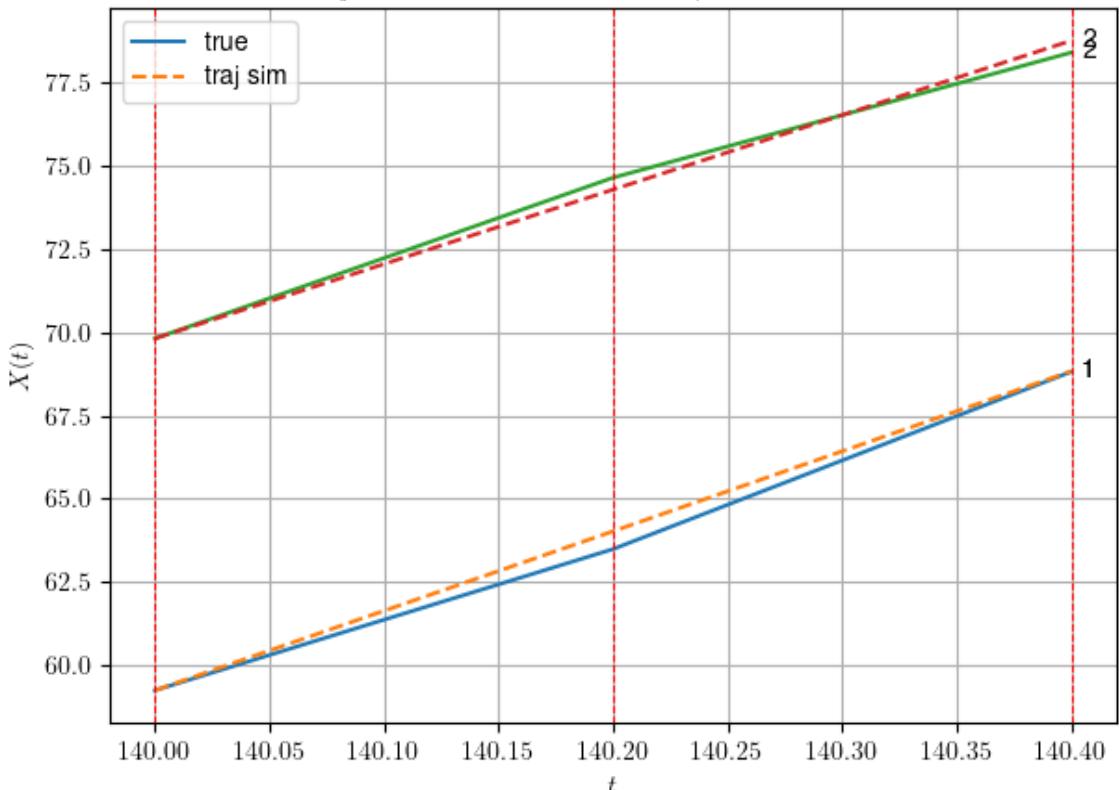
---

```
- Time interval n.1: [140.20, 140.40]
* y_true: [26.63314751]
* v_ann: [24.032400131225586, 22.365188336411514]
```

---

```
* err= 0.09052851668730606
* Learning rate NN = 0.00036449998151510954
* diff = 1.2171006745345658e-05
```

*df n. 9 – Scene n. 10, at it = 500*



For scene 10/33

```
* use LR_NN=0.0005 with err=2.221387385281143 at it=24
* v0_scn_mean = 22.67058080289681
* MAE = 0.08891684325336474
```

---



---



---

df n.9, scene n.11/33

---



---



---



---



---



---

We have 2 time intervals inside [143.60,144.00]

---

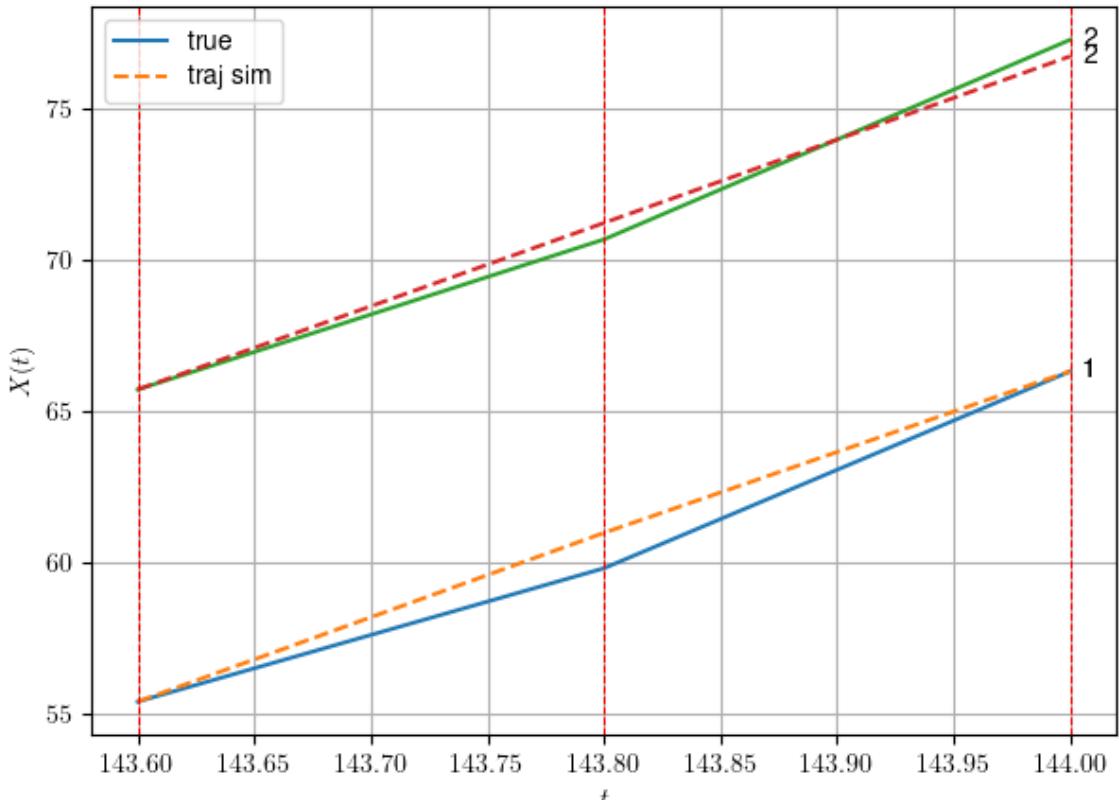
```
- Time interval n.0: [143.60, 143.80]
* y_true: [21.99451945]
* v_ann: [27.834714889526367, 27.476067876169598]
```

```
- Time interval n.1: [143.80, 144.00]
* y_true: [32.47370265]
* v_ann: [26.658531188964844, 27.476067876169598]
```

---

```
* err= 0.32623946818352556
* Learning rate NN = 0.00036449998151510954
* diff = 5.8161040348114756e-05
```

*df n. 9 – Scene n. 11, at it = 500*



For scene 11/33

```
* use LR_NN=0.0005 with err=0.48907850554606647 at it=24
* v0_scn_mean = 27.577025161103823
* MAE = 0.31711025517000235
```

---



---

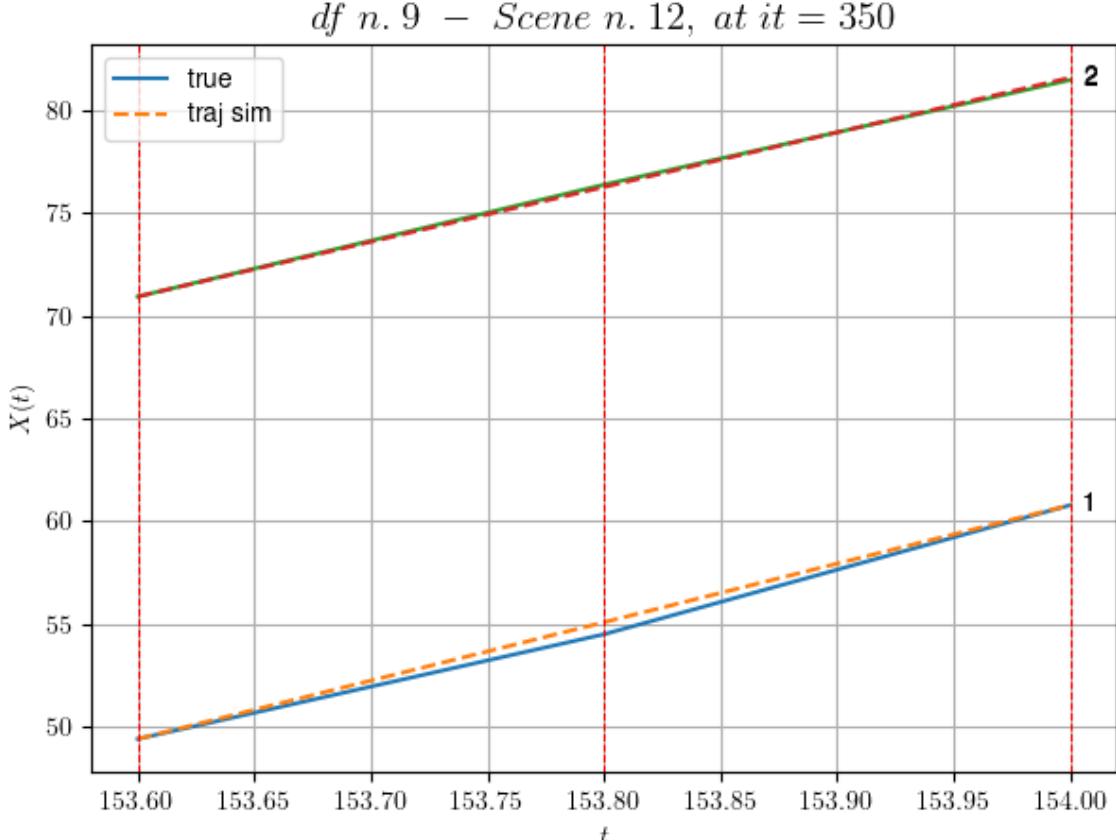
df n.9, scene n.12/33

---



---

```
We have 2 time intervals inside [153.60,154.00]
* err= 0.06173401087257602
* Learning rate NN = 4.049999552080408e-05
* diff = 1.5539845093365257e-07
```



For scene 12/33

- \* use LR\_NN=5e-05 with err=0.4540827125447438 at it=24
- \* v0\_scn\_mean = 26.86062421574249
- \* MAE = 0.06171177886518638

---



---

df n.9, scene n.13/33

---



---

We have 5 time intervals inside [155.40, 156.40]

- Time interval n.0: [155.40, 155.60]
  - \* y\_true: [29.25651225]
  - \* v\_ann: [35.36827087402344, 25.42352154213548]

---

- Time interval n.1: [155.60, 155.80]
  - \* y\_true: [27.27414917]
  - \* v\_ann: [30.58134651184082, 25.42352154213548]

---

- Time interval n.2: [155.80, 156.00]
  - \* y\_true: [30.96998359]
  - \* v\_ann: [27.886913299560547, 25.42352154213548]

---

- Time interval n.3: [156.00, 156.20]
  - \* y\_true: [31.99883945]

```
* v_ann: [28.49333953857422, 25.42352154213548]
```

---

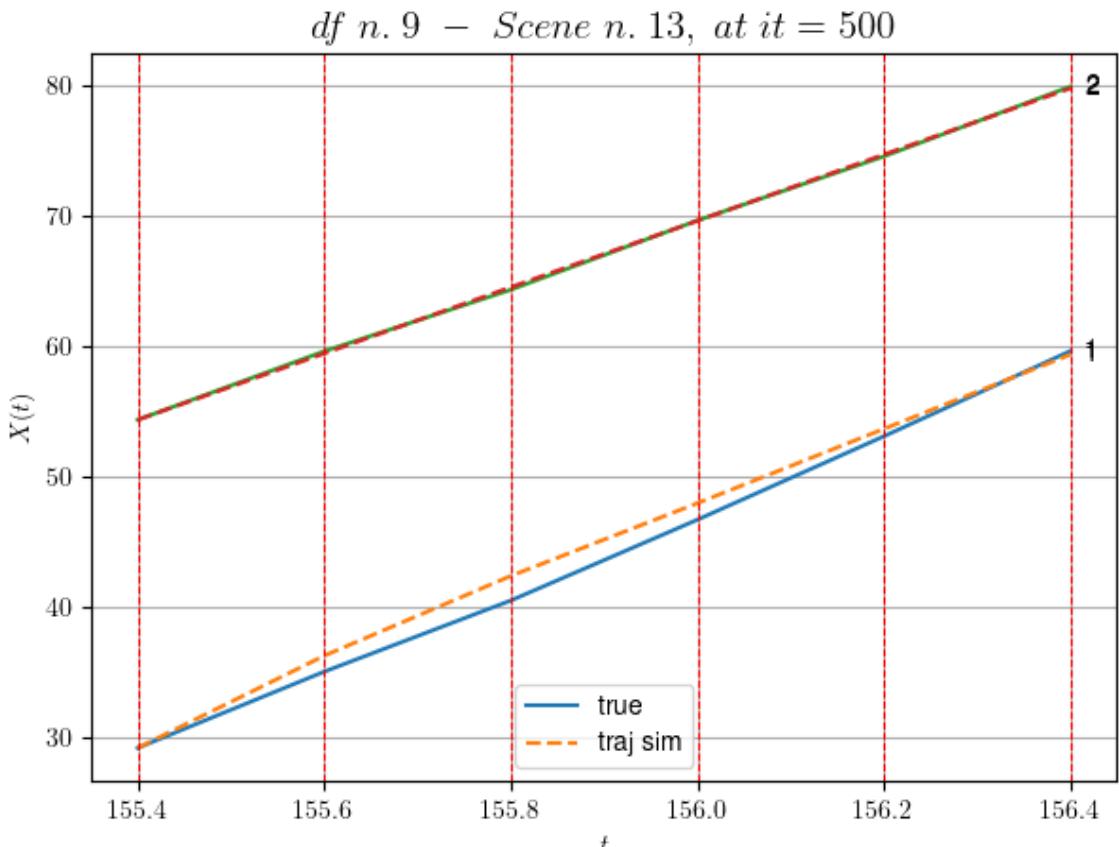
```
- Time interval n.4: [156.20, 156.40]
* y_true: [32.69834345]
* v_ann: [28.499235153198242, 25.42352154213548]
```

---



---

```
* err= 0.5957605213609787
* Learning rate NN = 0.0001937102060765028
* diff = 0.0023227727824943756
```



For scene 13/33

```
* use LR_NN=0.0005 with err=4.271638034753876 at it=24
* v0_scn_mean = 25.606580680415284
* MAE = 0.4168909294613165
```

---



---



---

df n.9, scene n.14/33

---



---



---

We have 6 time intervals inside [161.60, 162.80]

```
- Time interval n.0: [161.60, 161.80]
* y_true: [21.4660985]
* v_ann: [15.647109985351562, 22.164023913692947]
```

---



---

- Time interval n.1: [161.80, 162.00]

```
* y_true: [19.14413932]
* v_ann: [16.339120864868164, 22.164023913692947]
```

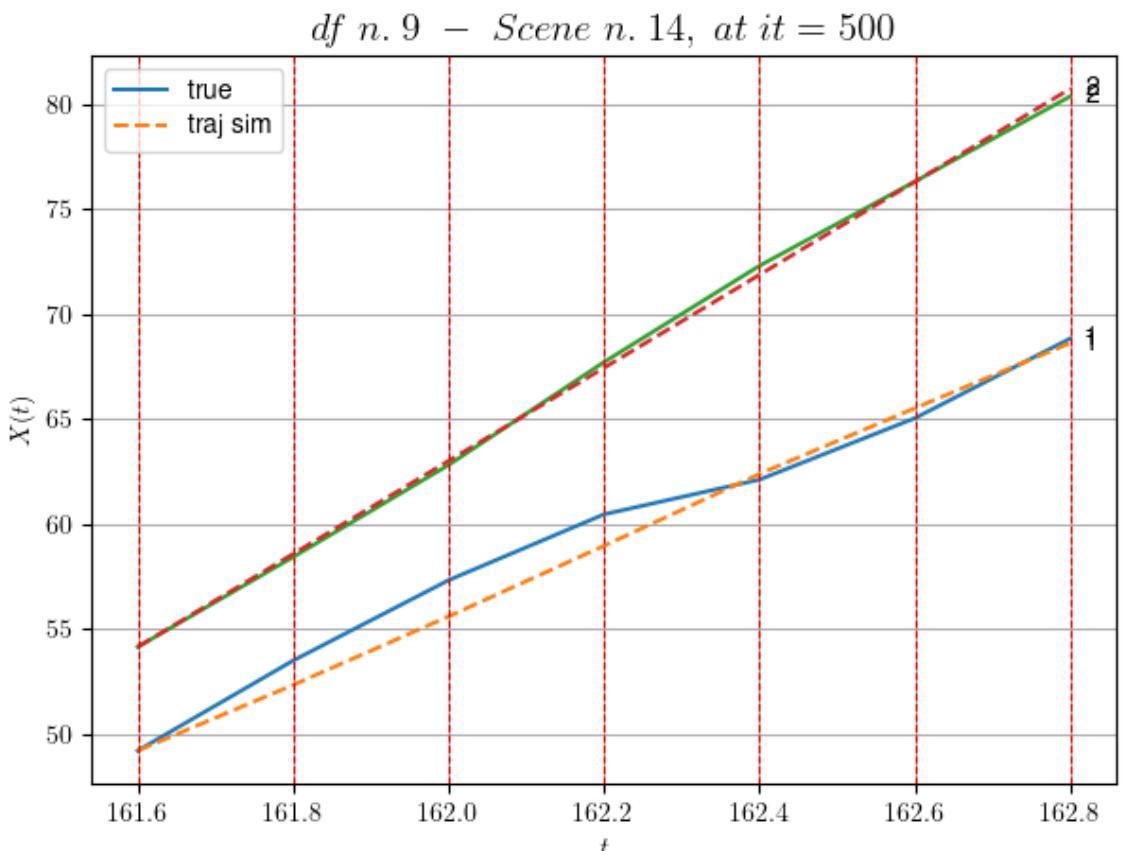
```
- Time interval n.2: [162.00, 162.20]
* y_true: [15.69105389]
* v_ann: [16.809532165527344, 22.164023913692947]
```

```
- Time interval n.3: [162.20, 162.40]
* y_true: [8.26260071]
* v_ann: [17.12664031982422, 22.164023913692947]
```

```
- Time interval n.4: [162.40, 162.60]
* y_true: [14.64714542]
* v_ann: [15.679861068725586, 22.164023913692947]
```

```
- Time interval n.5: [162.60, 162.80]
* y_true: [18.99114557]
* v_ann: [15.513676643371582, 22.164023913692947]
```

```
* err= 0.5273634095154438
* Learning rate NN = 0.00031381050939671695
* diff = 0.030912255672266853
```



For scene 14/33

```
* use LR_NN=0.001 with err=19.80136846600553 at it=24
* v0_scn_mean = 22.477462957085763
* MAE = 0.5273634095154438
```

```
=====
```

df n.9, scene n.15/33

```
=====
```

```
We have 7 time intervals inside [165.60,167.00]
- Time interval n.0: [165.60, 165.80]
 * y_true: [5.80515552]
 * v_ann: [8.904500961303711, 15.54922306934353]
```

```
- Time interval n.1: [165.80, 166.00]
 * y_true: [13.42041723]
 * v_ann: [8.521418571472168, 15.54922306934353]
```

```
- Time interval n.2: [166.00, 166.20]
 * y_true: [9.84291222]
 * v_ann: [9.811229705810547, 15.54922306934353]
```

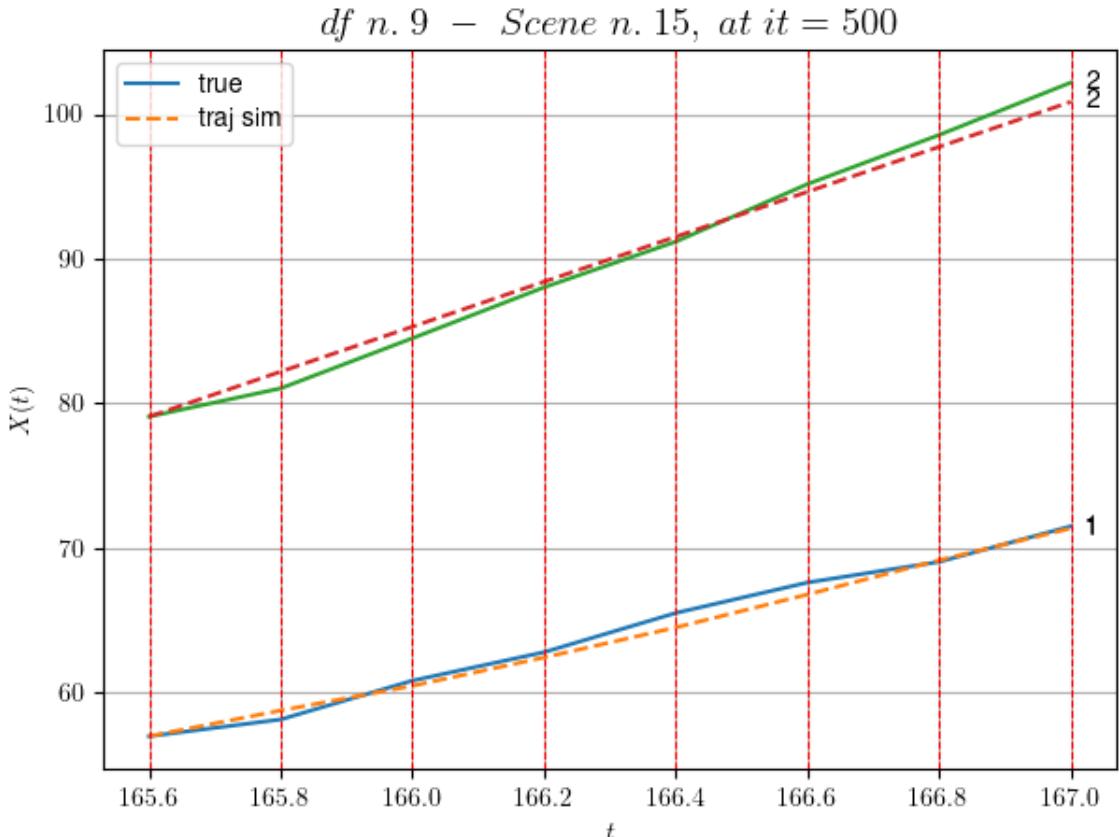
```
- Time interval n.3: [166.20, 166.40]
 * y_true: [13.55227269]
 * v_ann: [10.364251136779785, 15.54922306934353]
```

```
- Time interval n.4: [166.40, 166.60]
 * y_true: [10.52668652]
 * v_ann: [11.41368579864502, 15.54922306934353]
```

```
- Time interval n.5: [166.60, 166.80]
 * y_true: [7.16363747]
 * v_ann: [11.860945701599121, 15.54922306934353]
```

```
- Time interval n.6: [166.80, 167.00]
 * y_true: [12.29236678]
 * v_ann: [11.003881454467773, 15.54922306934353]
```

```
* err= 0.4586855082633818
* Learning rate NN = 0.00025418648147024214
* diff = 0.004323707932816445
```



For scene 15/33

- \* use LR\_NN=0.001 with err=69.3286170850085 at it=24
- \* v0\_scn\_mean = 16.12725414645948
- \* MAE = 0.37467438681187637

---



---

df n.9, scene n.16/33

---



---

We have 18 time intervals inside [172.60, 176.20]

- Time interval n.0: [172.60, 172.80]
  - \* y\_true: [7.57017038]
  - \* v\_ann: [11.723139762878418, 7.579600948718958]

---

- Time interval n.1: [172.80, 173.00]
  - \* y\_true: [5.21712635]
  - \* v\_ann: [11.490485191345215, 7.579600948718958]

---

- Time interval n.2: [173.00, 173.20]
  - \* y\_true: [10.96479034]
  - \* v\_ann: [11.158275604248047, 7.579600948718958]

---

- Time interval n.3: [173.20, 173.40]
  - \* y\_true: [4.35762504]

\* v\_ann: [11.125118255615234, 7.579600948718958]

- Time interval n.4: [173.40, 173.60]  
\* y\_true: [7.62623256]  
\* v\_ann: [10.754886627197266, 7.579600948718958]

- Time interval n.5: [173.60, 173.80]  
\* y\_true: [6.3217065]  
\* v\_ann: [10.572355270385742, 7.579600948718958]

- Time interval n.6: [173.80, 174.00]  
\* y\_true: [13.07932963]  
\* v\_ann: [10.352025985717773, 7.579600948718958]

- Time interval n.7: [174.00, 174.20]  
\* y\_true: [16.80719294]  
\* v\_ann: [10.477762222290039, 7.579600948718958]

- Time interval n.8: [174.20, 174.40]  
\* y\_true: [18.56108748]  
\* v\_ann: [10.743947982788086, 7.579600948718958]

- Time interval n.9: [174.40, 174.60]  
\* y\_true: [20.74045442]  
\* v\_ann: [10.990126609802246, 7.579600948718958]

- Time interval n.10: [174.60, 174.80]  
\* y\_true: [19.75285314]  
\* v\_ann: [11.162324905395508, 7.579600948718958]

- Time interval n.11: [174.80, 175.00]  
\* y\_true: [15.57181965]  
\* v\_ann: [11.170783996582031, 7.579600948718958]

- Time interval n.12: [175.00, 175.20]  
\* y\_true: [17.64022945]  
\* v\_ann: [11.096471786499023, 7.579600948718958]

- Time interval n.13: [175.20, 175.40]  
\* y\_true: [18.20175175]

```
* v_ann: [11.009718894958496, 7.579600948718958]
```

---

```
- Time interval n.14: [175.40, 175.60]
* y_true: [4.59061013]
* v_ann: [10.984903335571289, 7.579600948718958]
```

---

```
- Time interval n.15: [175.60, 175.80]
* y_true: [4.66662748]
* v_ann: [11.090849876403809, 7.579600948718958]
```

---

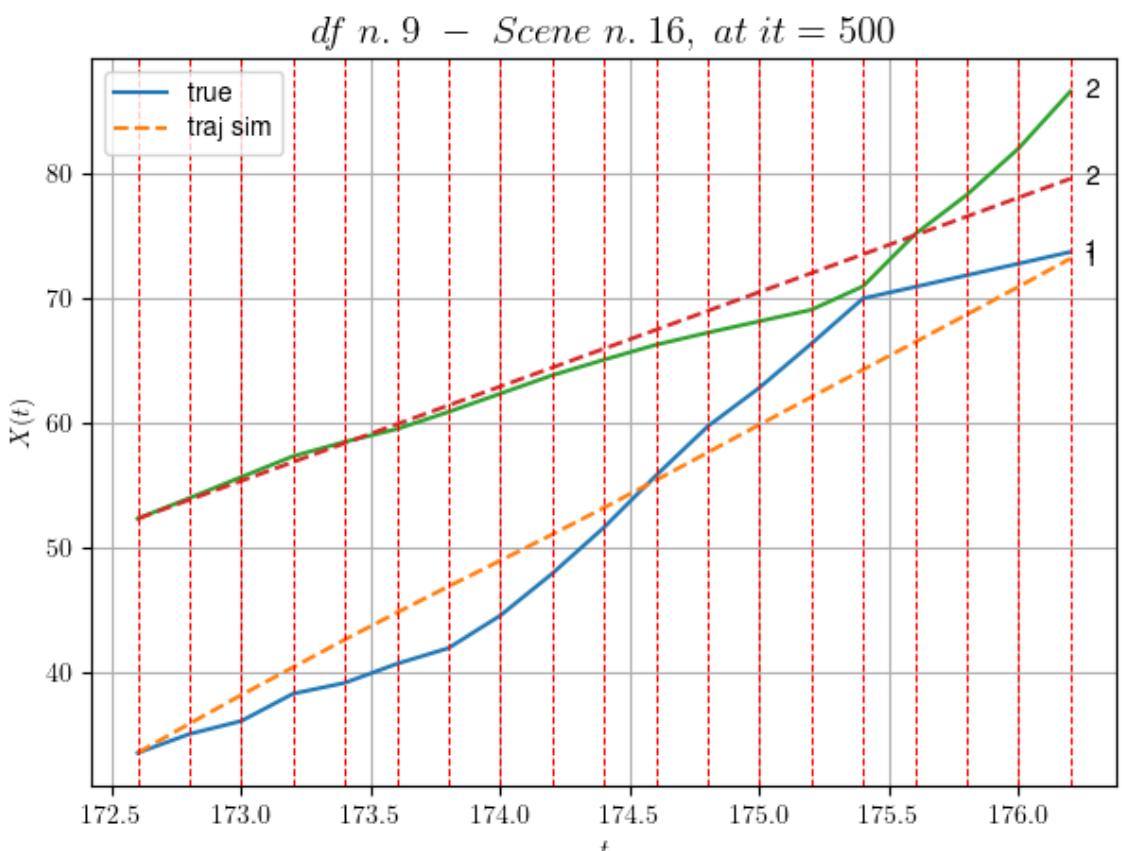
```
- Time interval n.16: [175.80, 176.00]
* y_true: [4.68563182]
* v_ann: [11.185891151428223, 7.579600948718958]
```

---

```
- Time interval n.17: [176.00, 176.20]
* y_true: [4.68563182]
* v_ann: [11.287023544311523, 7.579600948718958]
```

---

```
* err= 7.570838141983884
* Learning rate NN = 2.5031531549757347e-05
* it= 2400470007071028
```



For scene 16/33

\* use LR\_NN=0.001 with err=1110.7393500381365 at it=24

```
* v0_scn_mean = 8.476416910598855
* MAE = 7.561269107352134
```

```
=====
```

```
=====
```

```
df n.9, scene n.17/33
```

```
=====
```

```
=====
```

```
We have 16 time intervals inside [186.20,189.40]
```

```
- Time interval n.0: [186.20, 186.40]
 * y_true: [1.63882191]
 * v_ann: [5.352732181549072, 1.6231210654495514]
```

```
- Time interval n.1: [186.40, 186.60]
 * y_true: [1.63882191]
 * v_ann: [5.3466267585754395, 1.6231210654495514]
```

```
- Time interval n.2: [186.60, 186.80]
 * y_true: [1.63882191]
 * v_ann: [5.340779781341553, 1.6231210654495514]
```

```
- Time interval n.3: [186.80, 187.00]
 * y_true: [1.63882191]
 * v_ann: [5.335186958312988, 1.6231210654495514]
```

```
- Time interval n.4: [187.00, 187.20]
 * y_true: [1.63882191]
 * v_ann: [5.329844951629639, 1.6231210654495514]
```

```
- Time interval n.5: [187.20, 187.40]
 * y_true: [1.63882191]
 * v_ann: [5.324749946594238, 1.6231210654495514]
```

```
- Time interval n.6: [187.40, 187.60]
 * y_true: [1.63882191]
 * v_ann: [5.319899082183838, 1.6231210654495514]
```

```
- Time interval n.7: [187.60, 187.80]
 * y_true: [1.63882191]
 * v_ann: [5.3152875900268555, 1.6231210654495514]
```

```
- Time interval n.8: [187.80, 188.00]
```

```
* y_true: [5.75855569]
* v_ann: [5.310912132263184, 1.6231210654495514]

- Time interval n.9: [188.00, 188.20]
* y_true: [16.01304244]
* v_ann: [5.588332176208496, 1.6231210654495514]

- Time interval n.10: [188.20, 188.40]
* y_true: [19.22001446]
* v_ann: [6.583892822265625, 1.6231210654495514]

- Time interval n.11: [188.40, 188.60]
* y_true: [19.01536942]
* v_ann: [7.812496185302734, 1.6231210654495514]

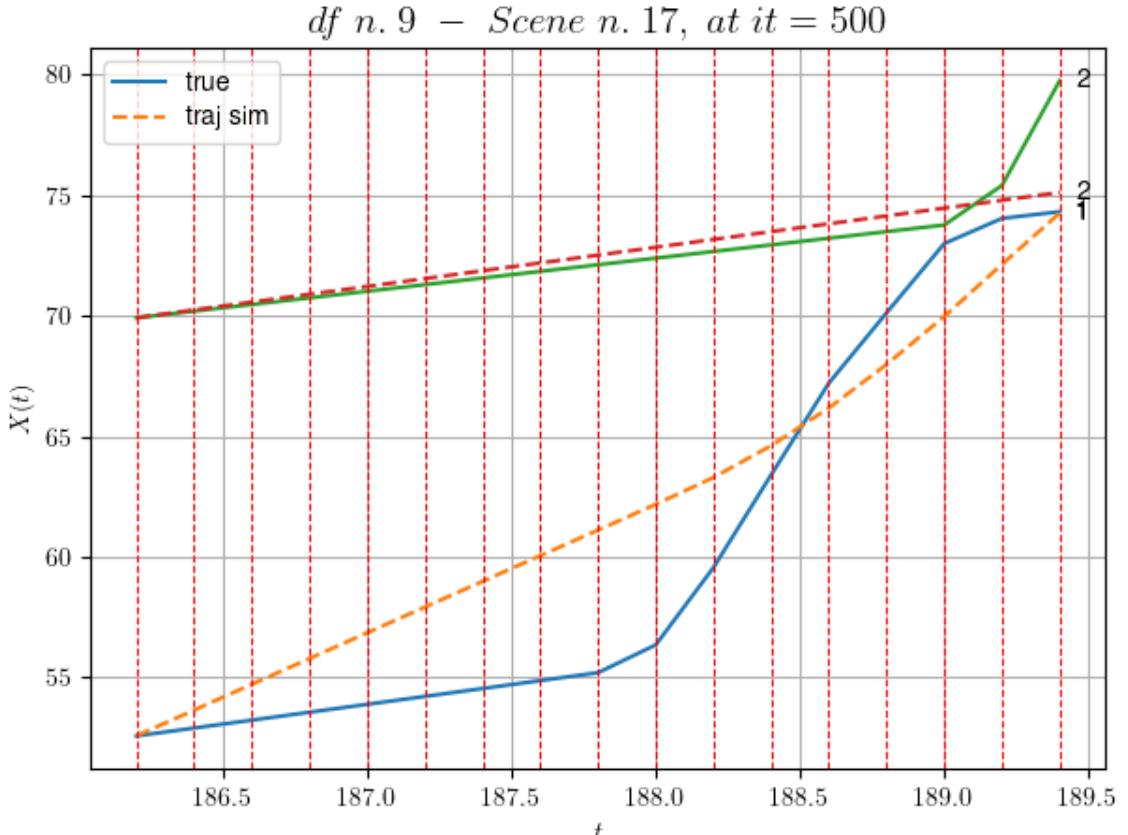
- Time interval n.12: [188.60, 188.80]
* y_true: [14.56662243]
* v_ann: [9.02493667602539, 1.6231210654495514]

- Time interval n.13: [188.80, 189.00]
* y_true: [14.35212246]
* v_ann: [9.928729057312012, 1.6231210654495514]

- Time interval n.14: [189.00, 189.20]
* y_true: [5.21247894]
* v_ann: [10.820928573608398, 1.6231210654495514]

- Time interval n.15: [189.20, 189.40]
* y_true: [1.37332387]
* v_ann: [10.613587379455566, 1.6231210654495514]

* err= 5.991026717080229
* Learning rate NN = 3.815201125689782e-06
```



For scene 17/33

- \* use LR\_NN=0.0001 with err=1418.6342888799577 at it=24
- \* v0\_scn\_mean = 2.758196222614706
- \* MAE = 5.989076193305454

---



---

df n.9, scene n.18/33

---



---

We have 5 time intervals inside [191.20, 192.20]

- Time interval n.0: [191.20, 191.40]
  - \* y\_true: [9.81240437]
  - \* v\_ann: [9.340622901916504, 9.117095848783517]

---

- Time interval n.1: [191.40, 191.60]
  - \* y\_true: [8.00871891]
  - \* v\_ann: [9.384232521057129, 9.117095848783517]

---

- Time interval n.2: [191.60, 191.80]
  - \* y\_true: [8.49713355]
  - \* v\_ann: [9.326363563537598, 9.117095848783517]

---

- Time interval n.3: [191.80, 192.00]
  - \* y\_true: [10.45079211]

```
* v_ann: [9.297088623046875, 9.117095848783517]
```

---

```
- Time interval n.4: [192.00, 192.20]
```

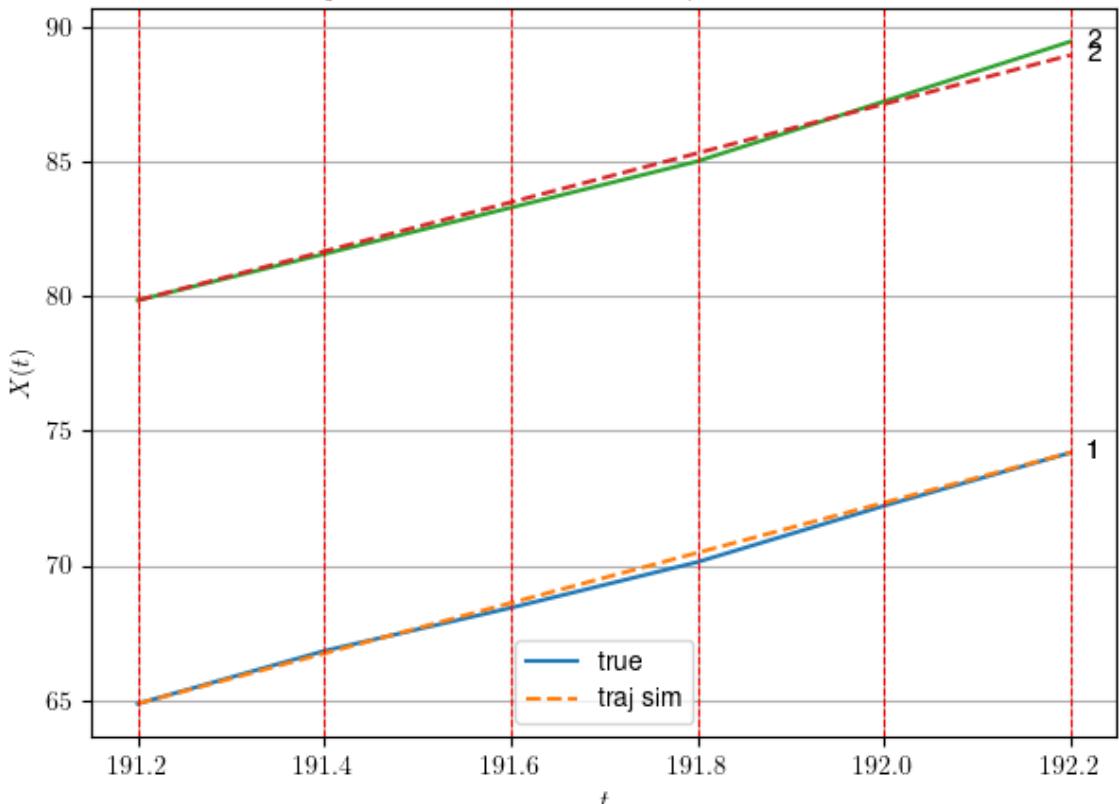
```
* y_true: [9.87700033]
```

```
* v_ann: [9.317566871643066, 9.117095848783517]
```

---

```
* err= 0.0484377798610425
* Learning rate NN = 1.9371018424862996e-05
* diff = 7.468695781018275e-05
```

*df n. 9 – Scene n. 18, at it = 500*



For scene 18/33

```
* use LR_NN=5e-05 with err=78.94217733986218 at it=24
```

```
* v0_scn_mean = 9.952412014672602
```

```
* MAE = 0.04563683384440923
```

---



---



---

df n.9, scene n.19/33

---



---



---



---



---



---

We have 2 time intervals inside [195.00, 195.40]

```
- Time interval n.0: [195.00, 195.20]
```

```
* y_true: [15.29426248]
```

```
* v_ann: [18.027633666992188, 26.77481390978863]
```

---



---



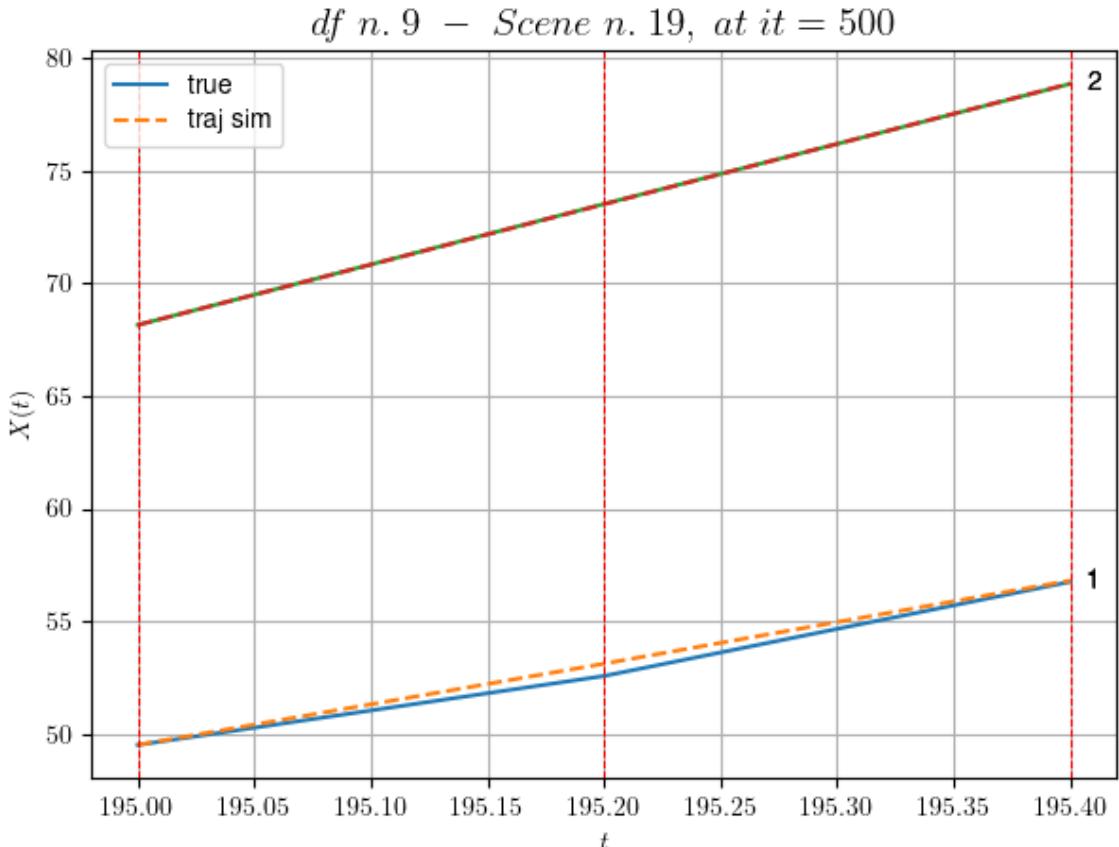
---

```
- Time interval n.1: [195.20, 195.40]
```

```
* y_true: [20.89286113]
* v_ann: [18.4482364654541, 26.77481390978863]
```

---

```
* err= 0.050420807795877376
* Learning rate NN = 7.289998757187277e-05
* diff = 0.0004298179280568873
```



For scene 19/33

```
* use LR_NN=0.0001 with err=0.37430872191894266 at it=24
* v0_scn_mean = 26.903821353372216
* MAE = 0.050403928332925015
```

---



---

df n.9, scene n.20/33

---



---

We have 6 time intervals inside [197.60,198.80]

- Time interval n.0: [197.60, 197.80]
  - \* y\_true: [25.64680127]
  - \* v\_ann: [25.079221725463867, 19.31029551440905]

---

- Time interval n.1: [197.80, 198.00]
  - \* y\_true: [20.34731781]
  - \* v\_ann: [22.76596450805664, 19.31029551440905]

---

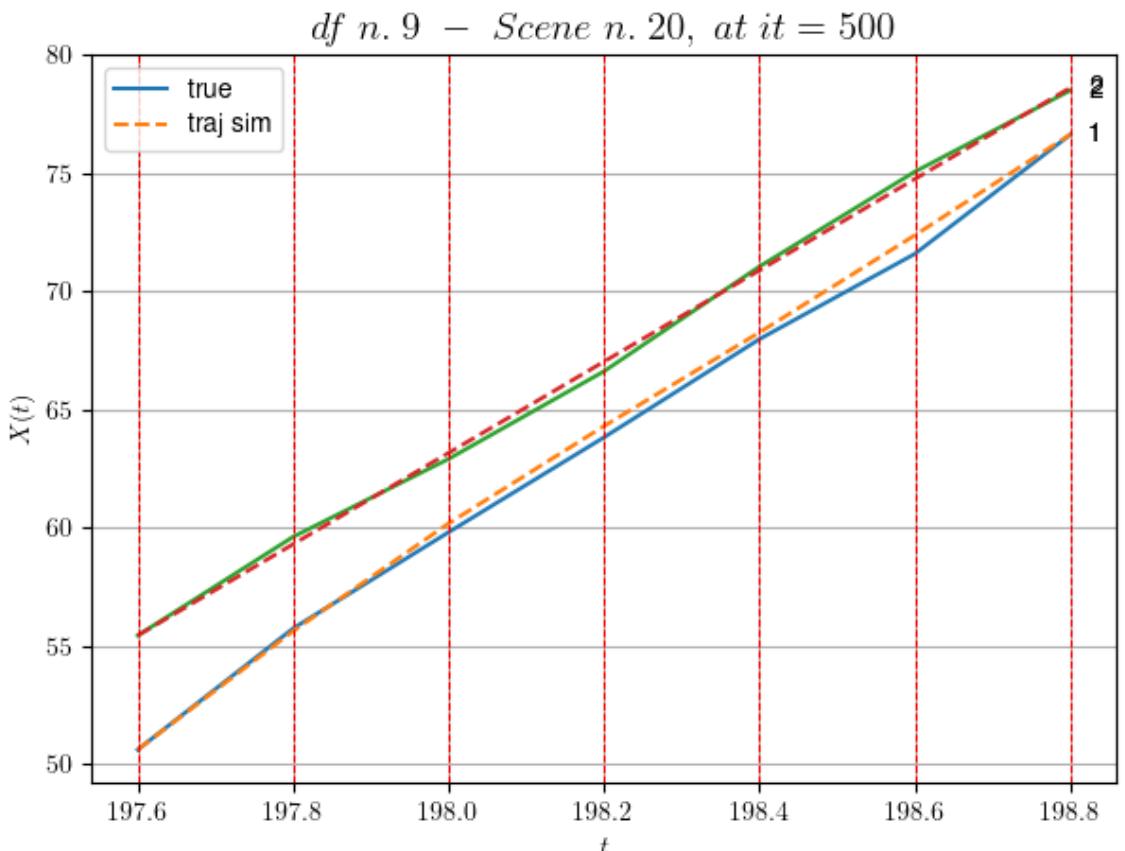
- Time interval n.2: [198.00, 198.20]  
 \* y\_true: [20.0662913]  
 \* v\_ann: [20.596723556518555, 19.31029551440905]

- Time interval n.3: [198.20, 198.40]  
 \* y\_true: [20.76944104]  
 \* v\_ann: [19.81109619140625, 19.31029551440905]

- Time interval n.4: [198.40, 198.60]  
 \* y\_true: [18.04411059]  
 \* v\_ann: [20.558897018432617, 19.31029551440905]

- Time interval n.5: [198.60, 198.80]  
 \* y\_true: [25.21812485]  
 \* v\_ann: [21.315841674804688, 19.31029551440905]

\* err= 0.11024144861848847  
 \* Learning rate NN = 0.00031381050939671695  
 \* diff = 0.0010984524679439056



For scene 20/33

\* use LR\_NN=0.001 with err=30.00334623181165 at it=24  
 \* v0\_scn\_mean = 19.737883693751094  
 \* MAE = 0.10914368852989267

=====

df n.9, scene n.21/33

=====

We have 12 time intervals inside [203.80, 206.20]

- Time interval n.0: [203.80, 204.00]
  - \* y\_true: [7.9642704]
  - \* v\_ann: [8.823197364807129, 17.40555771714608]

-----

- Time interval n.1: [204.00, 204.20]
  - \* y\_true: [10.57855329]
  - \* v\_ann: [8.936482429504395, 17.40555771714608]

-----

- Time interval n.2: [204.20, 204.40]
  - \* y\_true: [8.12921025]
  - \* v\_ann: [9.011672019958496, 17.40555771714608]

-----

- Time interval n.3: [204.40, 204.60]
  - \* y\_true: [8.4807463]
  - \* v\_ann: [9.06914234161377, 17.40555771714608]

-----

- Time interval n.4: [204.60, 204.80]
  - \* y\_true: [8.87567661]
  - \* v\_ann: [9.168108940124512, 17.40555771714608]

-----

- Time interval n.5: [204.80, 205.00]
  - \* y\_true: [10.22775467]
  - \* v\_ann: [9.253345489501953, 17.40555771714608]

-----

- Time interval n.6: [205.00, 205.20]
  - \* y\_true: [9.00303465]
  - \* v\_ann: [9.342233657836914, 17.40555771714608]

-----

- Time interval n.7: [205.20, 205.40]
  - \* y\_true: [9.60069477]
  - \* v\_ann: [9.469771385192871, 17.40555771714608]

-----

- Time interval n.8: [205.40, 205.60]
  - \* y\_true: [10.3608587]
  - \* v\_ann: [9.600212097167969, 17.40555771714608]

-----

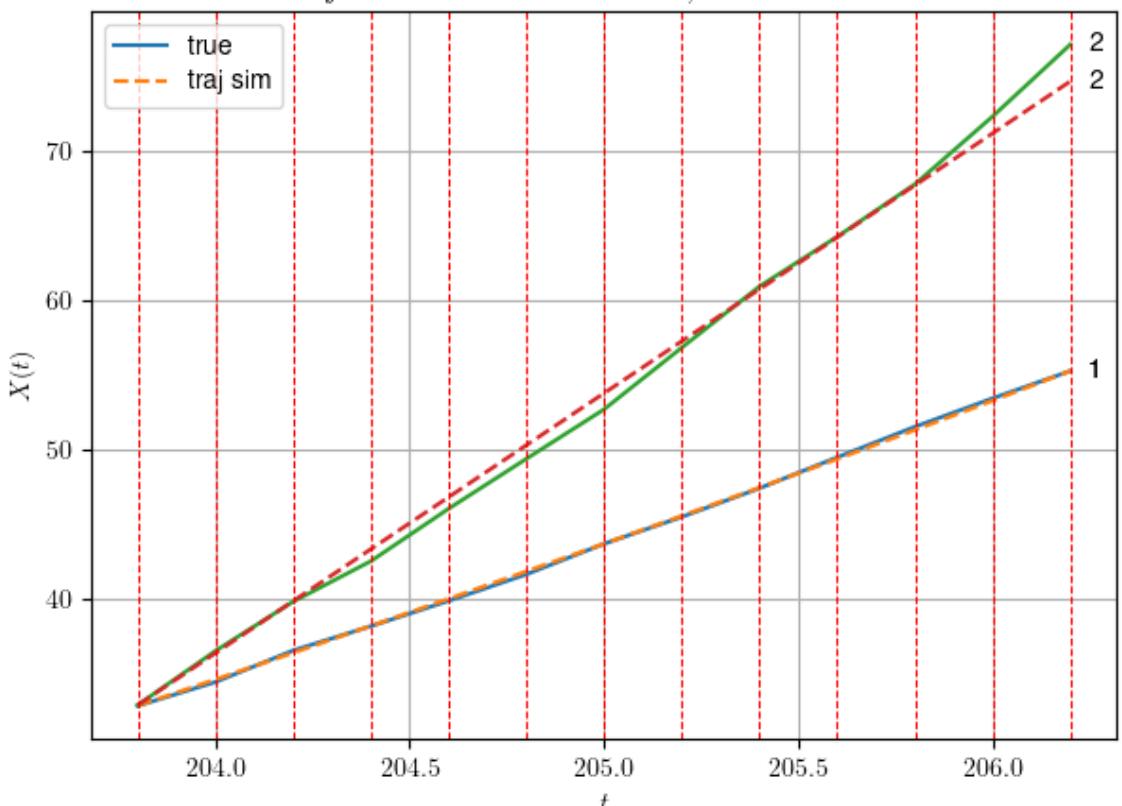
```
- Time interval n.9: [205.60, 205.80]
* y_true: [10.23429477]
* v_ann: [9.707429885864258, 17.40555771714608]
```

```
- Time interval n.10: [205.80, 206.00]
* y_true: [9.52209489]
* v_ann: [9.824496269226074, 17.40555771714608]
```

```
- Time interval n.11: [206.00, 206.20]
* y_true: [9.1692133]
* v_ann: [9.967438697814941, 17.40555771714608]
```

```
* err= 0.42620695401069897
* Learning rate NN = 4.431466732057743e-05
* diff = 9.765778897674604e-05
```

*df n. 9 – Scene n. 21, at it = 500*



For scene 21/33

```
* use LR_NN=0.0005 with err=170.55337404721857 at it=24
* v0_scn_mean = 17.909335408364317
* MAE = 0.3928790009562411
```

---



---

df n.9, scene n.22/33

---



---

```
=====
We have 2 time intervals inside [219.80,220.20]
- Time interval n.0: [219.80, 220.00]
 * y_true: [15.58371514]
 * v_ann: [14.129887580871582, 29.573992502784012]
```

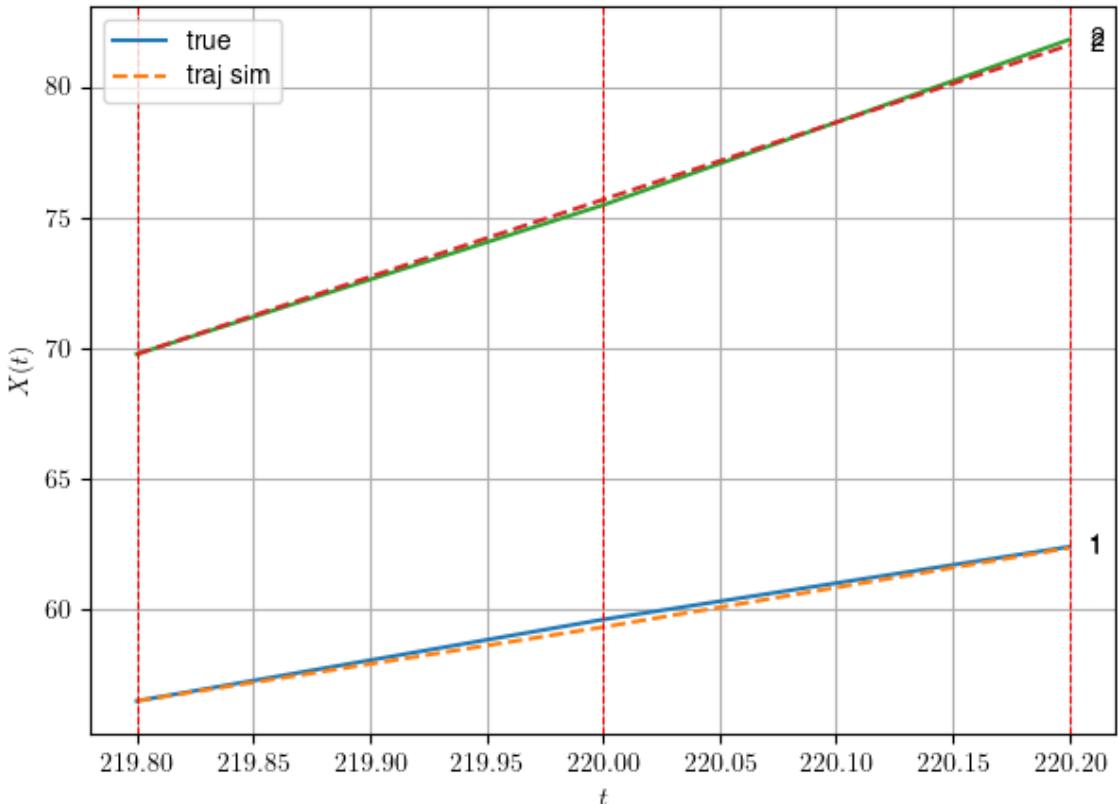
```

- Time interval n.1: [220.00, 220.20]
 * y_true: [13.92467981]
 * v_ann: [15.142167091369629, 29.573992502784012]
```

```

* err= 0.029170532991843606
* Learning rate NN = 7.289998757187277e-05
* diff = 0.00012623423040603043
```

*df n. 9 – Scene n. 22, at it = 500*



For scene 22/33

```
* use LR_NN=0.0001 with err=0.059160696779155496 at it=24
* v0_scn_mean = 29.59103280267158
* MAE = 0.029170532991843606
```

---



---

df n.9, scene n.23/33

---



---

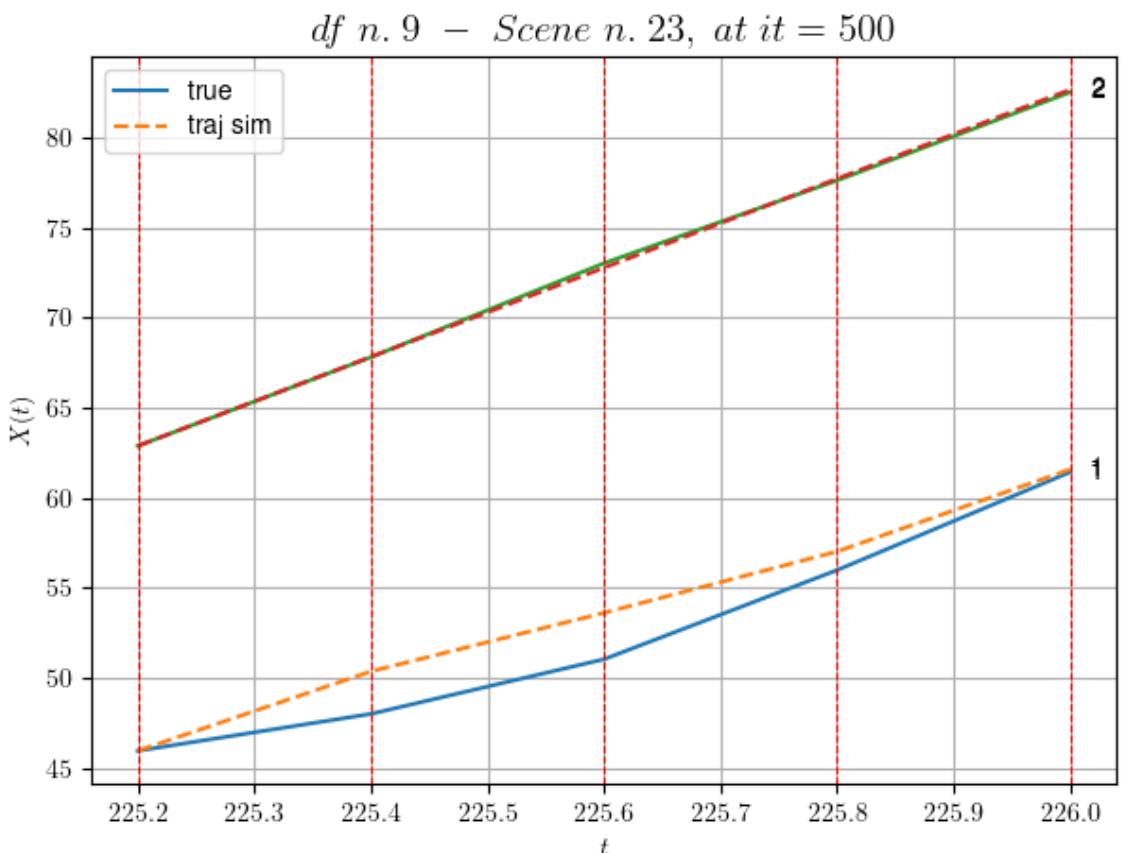
```
=====
We have 4 time intervals inside [225.20,226.00]
- Time interval n.0: [225.20, 225.40]
 * y_true: [10.23803701]
 * v_ann: [22.03889274597168, 24.737876605773526]
```

```
- Time interval n.1: [225.40, 225.60]
* y_true: [15.18402828]
* v_ann: [16.26947593688965, 24.737876605773526]
```

```
- Time interval n.2: [225.60, 225.80]
* y_true: [24.75572707]
* v_ann: [17.02896499633789, 24.737876605773526]
```

```
- Time interval n.3: [225.80, 226.00]
* y_true: [27.22613969]
* v_ann: [22.815881729125977, 24.737876605773526]
```

```
* err= 1.3394135746428977
* Learning rate NN = 0.000478296831715852
* diff = 0.005471221666757176
```



For scene 23/33

```
* use LR_NN=0.001 with err=3.7819766933921453 at it=24
* v0_scn_mean = 24.94836154150196
* MAE = 0.49601502511730516
```

df n.9, scene n.24/33

---



---

We have 3 time intervals inside [5.40,6.00]

- Time interval n.0: [5.40, 5.60]

- \* y\_true: [17.46255149 32.38946228]

- \* v\_ann: [24.90888786315918, 27.037723541259766, 2  
9.081107080157114]

---



---

- Time interval n.1: [5.60, 5.80]

- \* y\_true: [27.89361325 30.52270411]

- \* v\_ann: [27.06798553466797, 26.819433212280273, 2  
9.081107080157114]

---



---

- Time interval n.2: [5.80, 6.00]

- \* y\_true: [26.75613901 28.6867411 ]

- \* v\_ann: [29.7705020904541, 27.9534854888916, 29.08  
1107080157114]

---

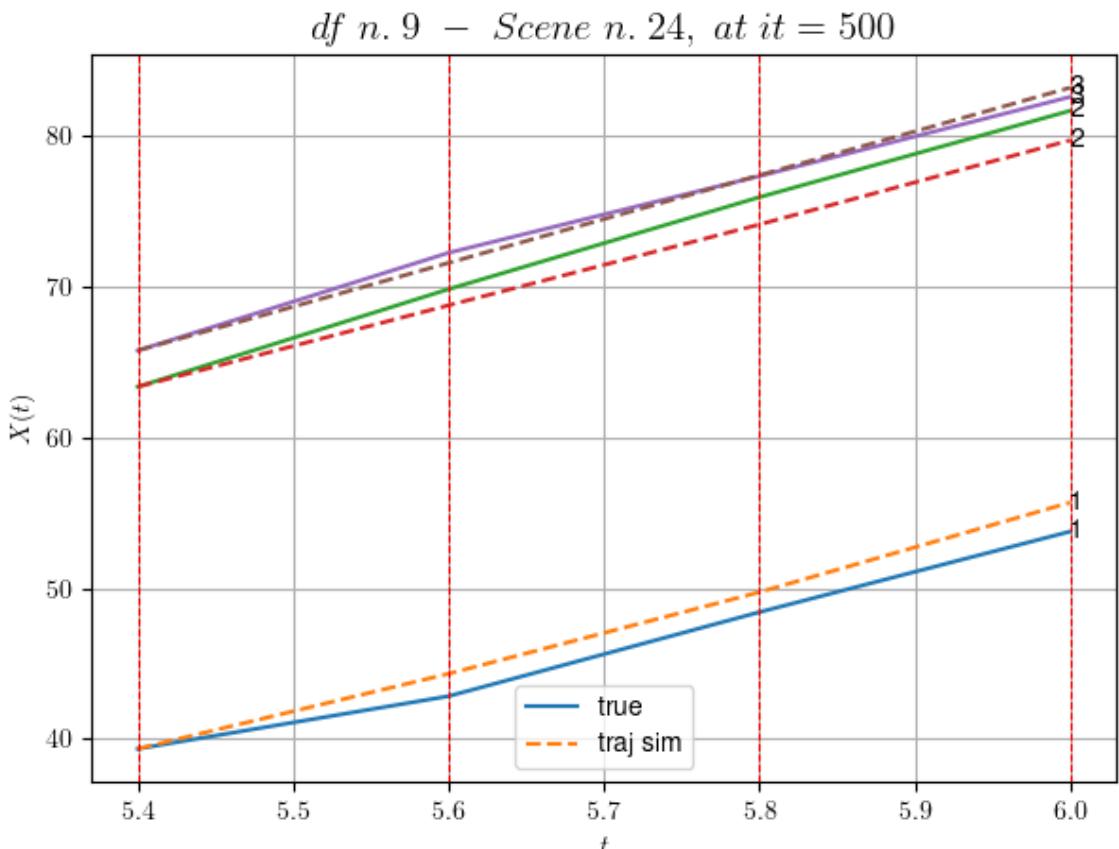


---

- \* err= 1.3976274496516246

- \* Learning rate NN = 0.0005904899444431067

- \* diff = 0.002794096255259504



For scene 24/33

- \* use LR\_NN=0.001 with err=36.41283176445121 at it=24

- \* v0\_scn\_mean = 29.13624061409139

- \* MAE = 1.2251126968807247

```
=====
=====
```

df n.9, scene n.25/33

```
=====
=====
```

We have 2 time intervals inside [20.80,21.20]

- Time interval n.0: [20.80, 21.00]

- \* y\_true: [29.01888251 26.46522664]

- \* v\_ann: [27.650846481323242, 27.039470672607422, 3  
2.733311571962915]

```
=====
=====
```

- Time interval n.1: [21.00, 21.20]

- \* y\_true: [29.93697896 25.84808908]

- \* v\_ann: [27.98714828491211, 28.56659698486328, 32.  
733311571962915]

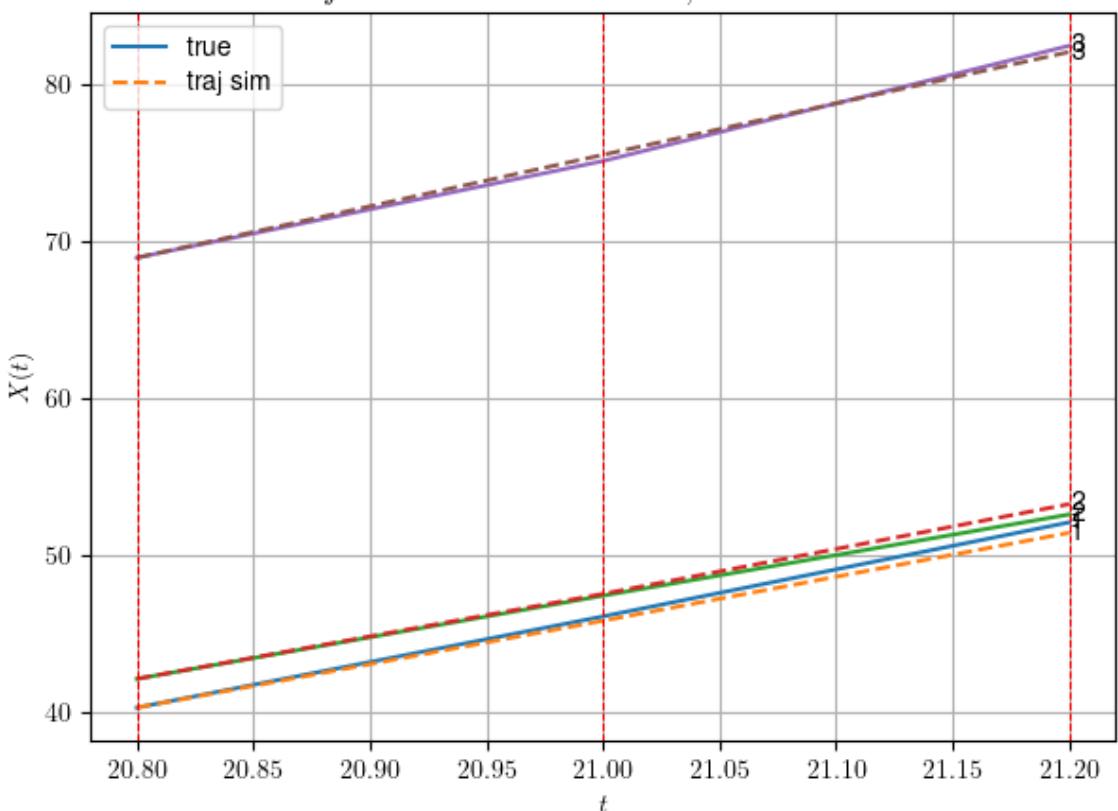
```
=====
=====
```

- \* err= 0.14149975458878664

- \* Learning rate NN = 0.0007289999630302191

- \* diff = 0.00016056036348935376

*df n. 9 – Scene n. 25, at it = 500*



For scene 25/33

- \* use LR\_NN=0.001 with err=10.79689709620033 at it=24

- \* v0\_scn\_mean = 32.56931300036487

- \* MAE = 0.1366272491341784

```
=====
=====
```

```
df n.9, scene n.26/33
=====
=====
 We have 6 time intervals inside [37.80,39.00]
 - Time interval n.0: [37.80, 38.00]
 * y_true: [21.35828745 27.25004814]
 * v_ann: [22.041780471801758, 22.846473693847656, 2
3.639051069297984]

 - Time interval n.1: [38.00, 38.20]
 * y_true: [19.23626153 17.91519282]
 * v_ann: [22.745882034301758, 23.3133487701416, 23.
639051069297984]

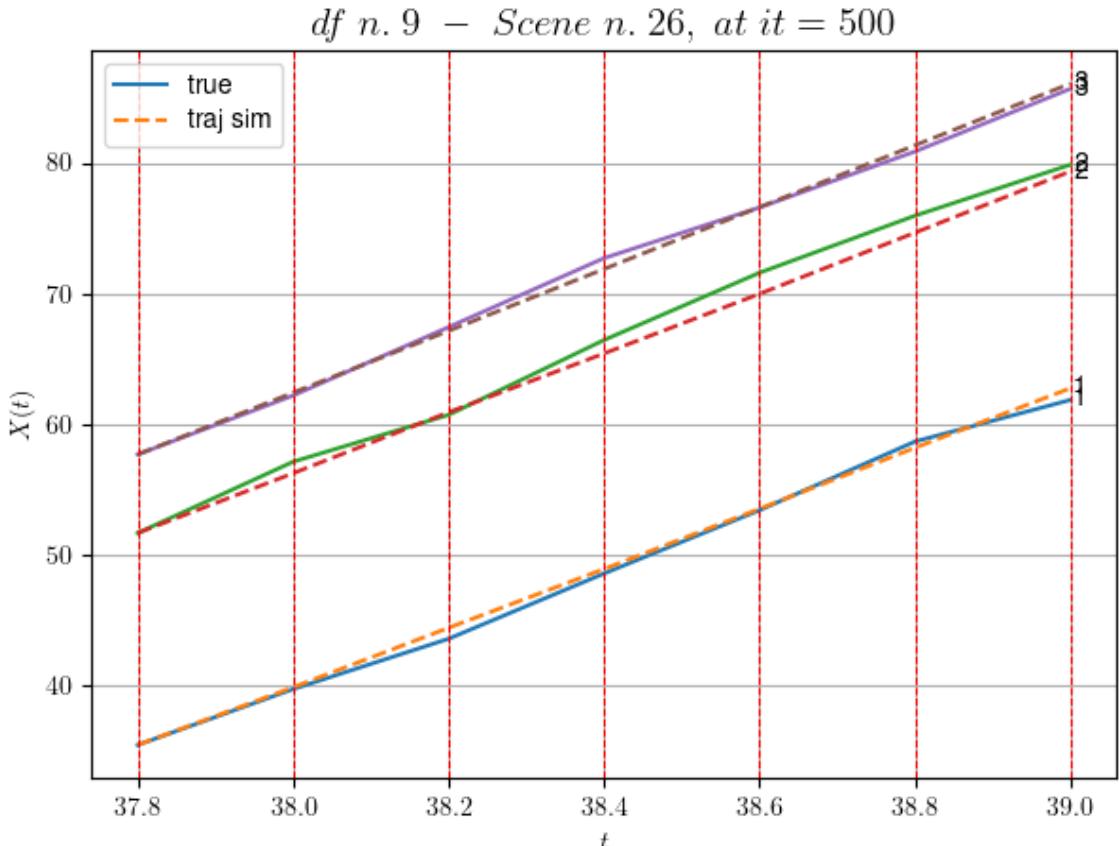
 - Time interval n.2: [38.20, 38.40]
 * y_true: [24.96063116 28.62771944]
 * v_ann: [22.4659423828125, 22.493589401245117, 23.
639051069297984]

 - Time interval n.3: [38.40, 38.60]
 * y_true: [24.1844348 25.71934895]
 * v_ann: [23.05414581298828, 22.78746223449707, 23.
639051069297984]

 - Time interval n.4: [38.60, 38.80]
 * y_true: [26.26418379 21.80127307]
 * v_ann: [23.318470001220703, 23.392744064331055, 2
3.639051069297984]

 - Time interval n.5: [38.80, 39.00]
 * y_true: [15.9216195 19.51476921]
 * v_ann: [22.764408111572266, 23.439624786376953, 2
3.639051069297984]

* err= 0.4522465182218223
* Learning rate NN = 1.5690524378442205e-05
* diff = 0.00014214487824437683
```



For scene 26/33

- \* use LR\_NN=5e-05 with err=46.046794666771994 at it=24
- \* v0\_scn\_mean = 24.020707719547275
- \* MAE = 0.45097982520051927

---



---

df n.9, scene n.27/33

---



---

We have 2 time intervals inside [44.40, 44.80]

- Time interval n.0: [44.40, 44.60]
  - \* y\_true: [24.95803839 22.94664651]
  - \* v\_ann: [26.65679931640625, 27.227384567260742, 1

8.0161067205083]

---



---

- Time interval n.1: [44.60, 44.80]

- \* y\_true: [22.38974011 30.85088397]

- \* v\_ann: [22.599361419677734, 23.677305221557617, 1

8.0161067205083]

---

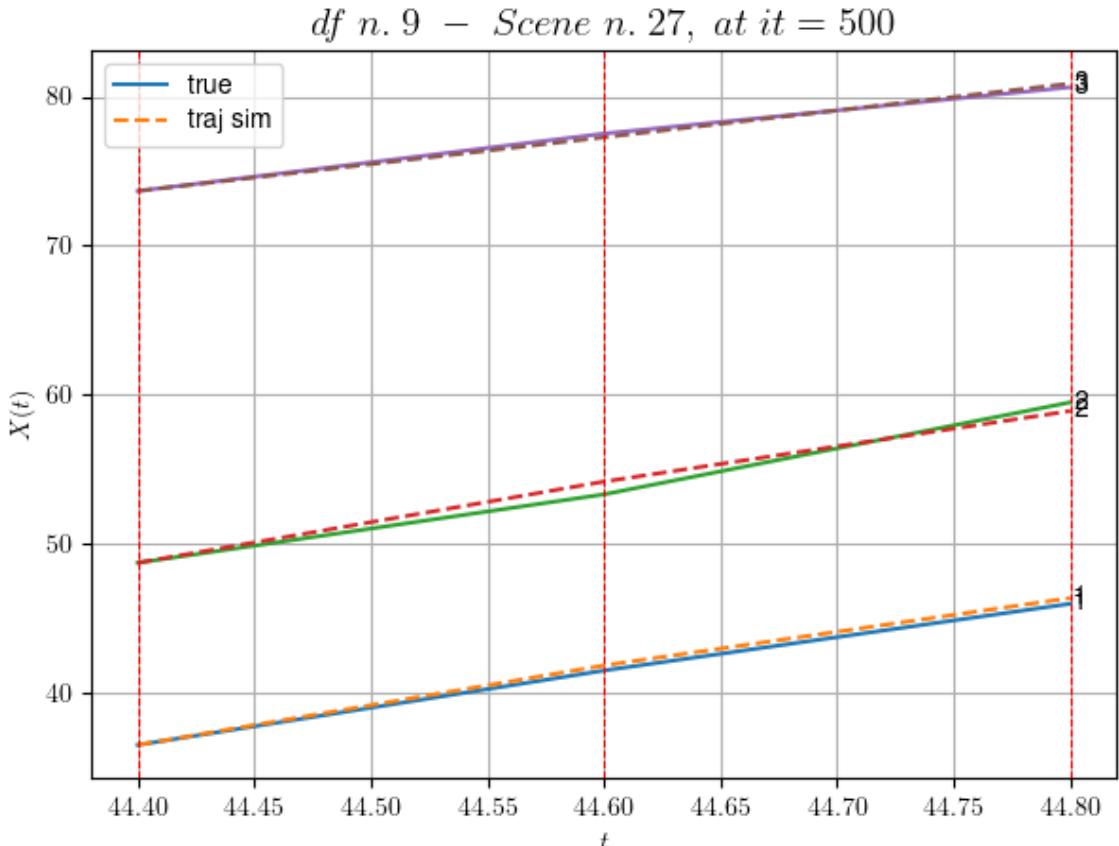


---

- \* err= 0.16124638091123686

- \* Learning rate NN = 0.00036449998151510954

- \* diff = 0.000562529073414586



For scene 27/33

```
* use LR_NN=0.0005 with err=5.495614160677616 at it=24
* v0_scn_mean = 18.735139779226927
* MAE = 0.14763780246597397
```

---



---

df n.9, scene n.28/33

---



---

We have 3 time intervals inside [117.80, 118.40]

- Time interval n.0: [117.80, 118.00]
  - \* y\_true: [26.21501314 26.51617559]
  - \* v\_ann: [19.611948013305664, 23.556482315063477, 3  
2.94782563350119]

---



---

- Time interval n.1: [118.00, 118.20]
  - \* y\_true: [24.27291409 32.45579962]
  - \* v\_ann: [24.278560638427734, 35.04778289794922, 3  
2.94782563350119]

---



---

- Time interval n.2: [118.20, 118.40]
  - \* y\_true: [21.96072195 23.86482679]
  - \* v\_ann: [20.195632934570312, 24.136133193969727, 3  
2.94782563350119]

---

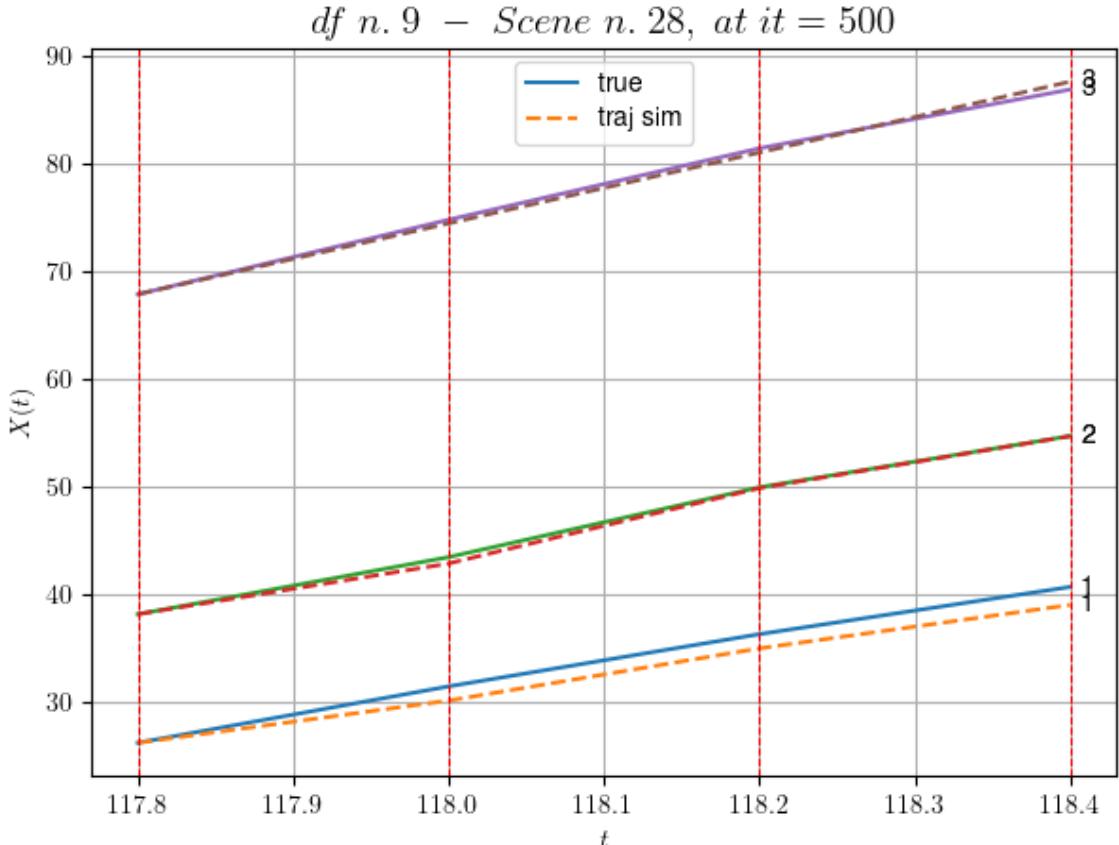


---

```

* err= 0.6200634157141812
* Learning rate NN = 0.0005904899444431067
* diff = 0.5658096840358368

```



For scene 28/33

```

* use LR_NN=0.001 with err=6.815609017545874 at it=24
* v0_scn_mean = 32.77095622784194
* MAE = 0.40110969576949485

```

---



---

df n.9, scene n.29/33

---



---

We have 2 time intervals inside [119.20, 119.60]

- Time interval n.0: [119.20, 119.40]
  - \* y\_true: [23.20444186 22.52067771]
  - \* v\_ann: [25.410934448242188, 24.5993709564209, 26.734589830538614]

---

- Time interval n.1: [119.40, 119.60]
  - \* y\_true: [27.39348249 26.5570173 ]
  - \* v\_ann: [24.99700164794922, 24.699161529541016, 26.734589830538614]

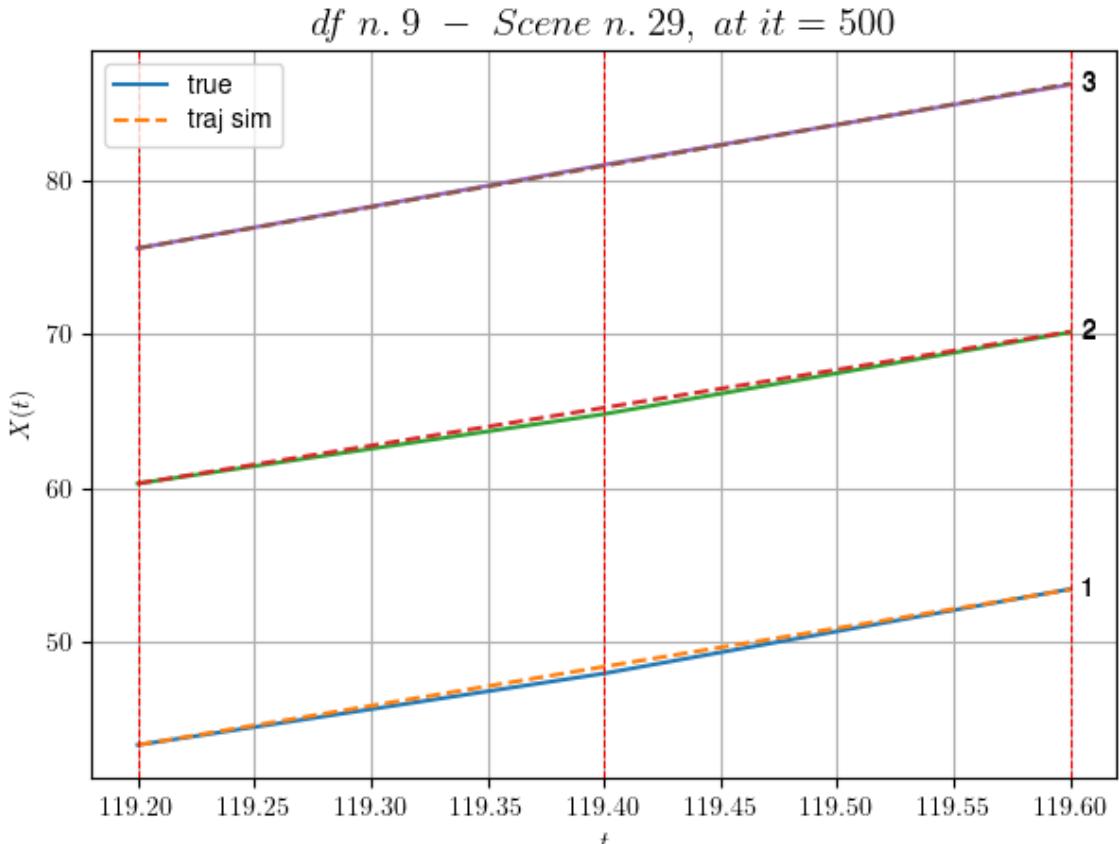
---

```

* err= 0.042419909595584365
* Learning rate NN = 7.289998757187277e-05

```

\* diff = 3.811025047900651e-05



For scene 29/33

\* use LR\_NN=0.0001 with err=0.2972433487006841 at it=24  
 \* v0\_scn\_mean = 26.930514294096284  
 \* MAE = 0.04185426132365628

---



---

df n.9, scene n.30/33

---



---

We have 2 time intervals inside [120.20, 120.60]

- Time interval n.0: [120.20, 120.40]
  - \* y\_true: [30.48045094 26.16776015]
  - \* v\_ann: [25.40777786254883, 27.511716842651367, 27.348987307571253]

---

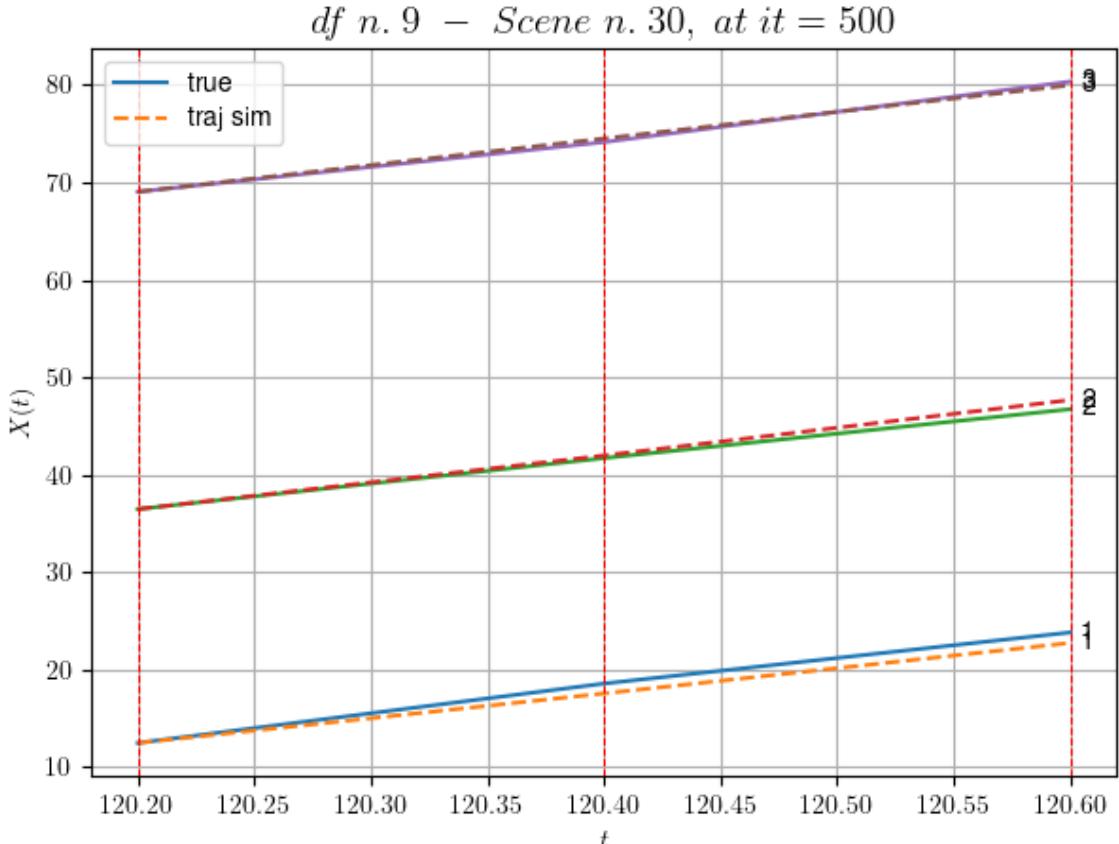
- Time interval n.1: [120.40, 120.60]
  - \* y\_true: [26.23623075 25.12734403]
  - \* v\_ann: [25.929197311401367, 28.491945266723633, 27.348987307571253]

---

\* err= 0.38079756519163716

\* Learning rate NN = 7.289998757187277e-05

\* diff = 0.006456309904385227



For scene 30/33

```
* use LR_NN=0.0001 with err=1.5592927812440331 at it=24
* v0_scn_mean = 27.508047950092376
* MAE = 0.38079756519163716
```

---



---

df n.9, scene n.31/33

---



---

We have 3 time intervals inside [121.40, 122.00]

- Time interval n.0: [121.40, 121.60]
  - \* y\_true: [23.88369588 31.34452269]
  - \* v\_ann: [26.464496612548828, 26.422080993652344, 28.657528434577976]

---



---

- Time interval n.1: [121.60, 121.80]
  - \* y\_true: [22.66516063 24.1738881 ]
  - \* v\_ann: [25.512937545776367, 27.734750747680664, 28.657528434577976]

---



---

- Time interval n.2: [121.80, 122.00]
  - \* y\_true: [27.39865086 24.79107704]
  - \* v\_ann: [24.495365142822266, 23.02297592163086, 28.657528434577976]

---

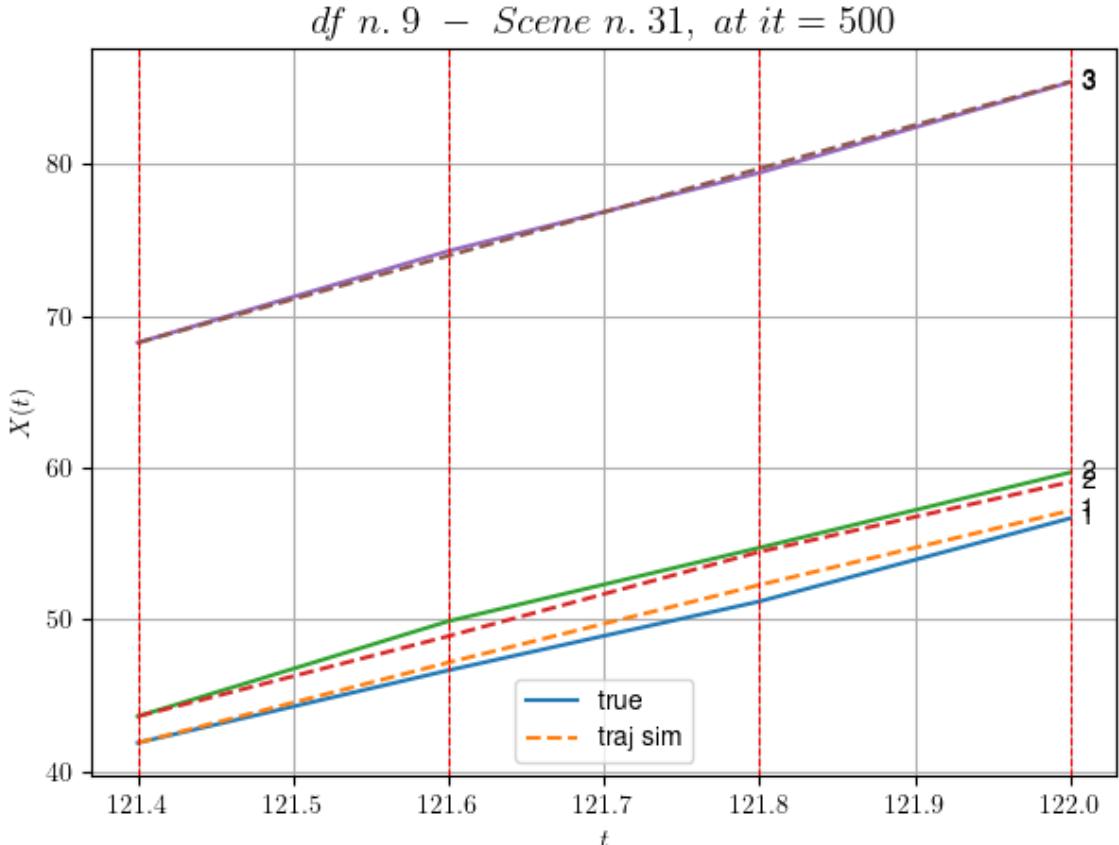


---

```

* err= 0.2756049750927412
* Learning rate NN = 0.0002952449722215533
* diff = 0.003056001258165131

```



For scene 31/33

```

* use LR_NN=0.0005 with err=16.519791981861204 at it=24
* v0_scn_mean = 28.73807666822909
* MAE = 0.12024818181539802

```

---



---

df n. 9, scene n. 32/33

---



---

We have 2 time intervals inside [205.80, 206.20]

- Time interval n.0: [205.80, 206.00]
  - \* y\_true: [16.81767795 9.52209489]
  - \* v\_ann: [11.49349594116211, 13.263949394226074, 2

3.158651176006686]

---

- Time interval n.1: [206.00, 206.20]

- \* y\_true: [13.65726133 9.1692133 ]

- \* v\_ann: [12.514512062072754, 12.000418663024902, 2

3.158651176006686]

---

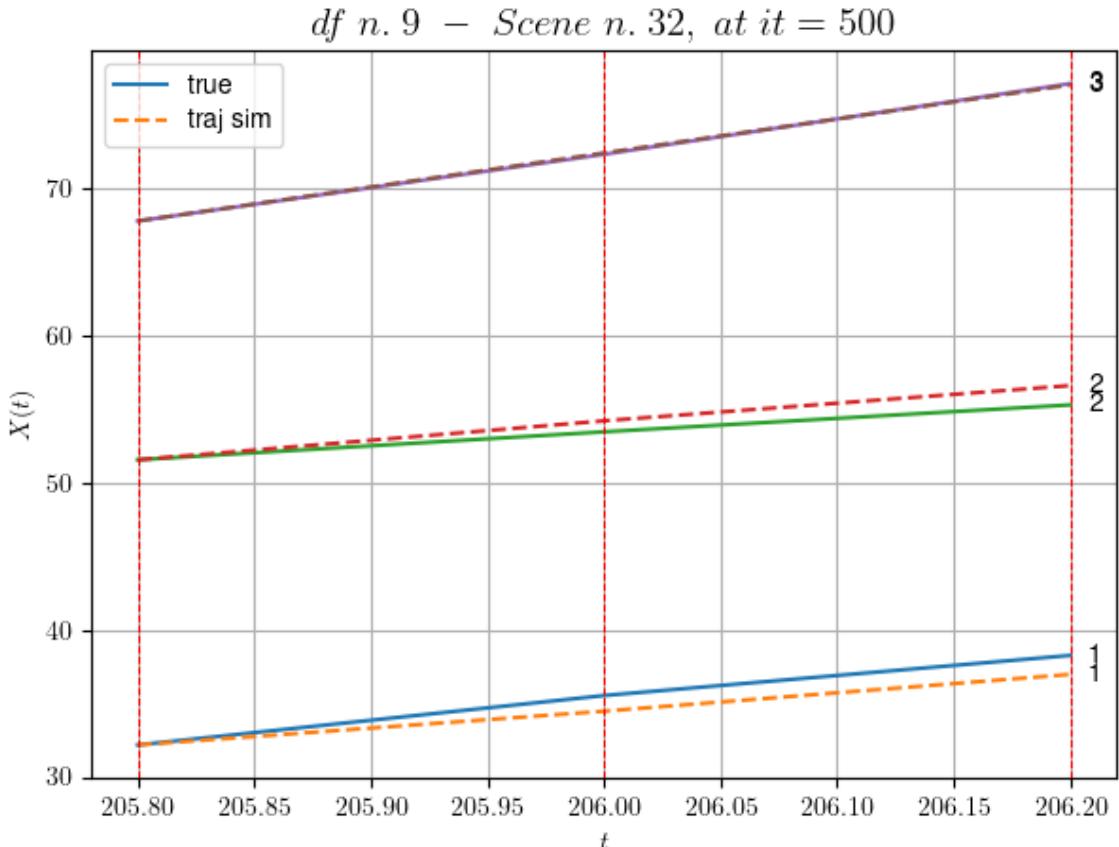


---

\* err= 0.5680564810009742

\* Learning rate NN = 7.289998757187277e-05

\* diff = 0.0006572470307607547



For scene 32/33

- \* use LR\_NN=0.0001 with err=1.3202924454477882 at it=24
- \* v0\_scn\_mean = 23.56913179828486
- \* MAE = 0.5680564810009742

---



---

For df=9 with 33 scenes, time taken: 611.86

---



---



---



---

In df n.10/10 we have 74 scenes

df n.10, scene n.0/74

---



---

We have 3 time intervals inside [12.72, 13.32]

- Time interval n.0: [12.72, 12.92]
  - \* y\_true: [11.70075978]
  - \* v\_ann: [10.912931442260742, 23.837684223240988]

---



---

- Time interval n.1: [12.92, 13.12]

- \* y\_true: [15.28108747]

- \* v\_ann: [12.595714569091797, 23.837684223240988]

---



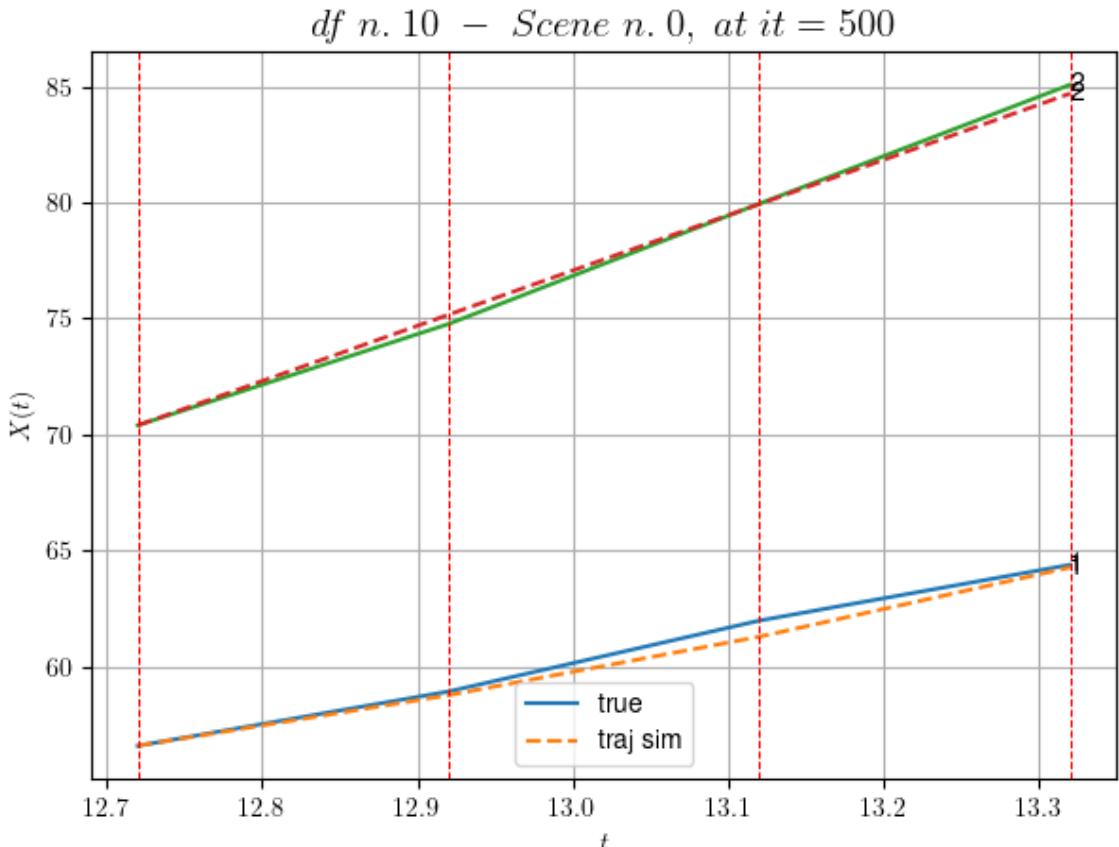
---

- Time interval n.2: [13.12, 13.32]

```
* y_true: [12.03091739]
* v_ann: [14.93775463104248, 23.837684223240988]
```

---

```
* err= 0.1031279441122395
* Learning rate NN = 0.0002952449722215533
* diff = 0.00012490483112026496
```



For scene 0/74

```
* use LR_NN=0.0005 with err=2.543347569464465 at it=24
* v0_scn_mean = 24.084176854264243
* MAE = 0.1031279441122395
```

---



---

df n.10, scene n.1/74

---



---

We have 5 time intervals inside [24.52, 25.52]

- Time interval n.0: [24.52, 24.72]
  - \* y\_true: [20.69094088]
  - \* v\_ann: [16.08694839477539, 27.84672922808639]

---

- Time interval n.1: [24.72, 24.92]
  - \* y\_true: [21.00112482]
  - \* v\_ann: [19.29397964477539, 27.84672922808639]

---

```
- Time interval n.2: [24.92, 25.12]
* y_true: [22.54141935]
* v_ann: [23.085603713989258, 27.84672922808639]
```

---

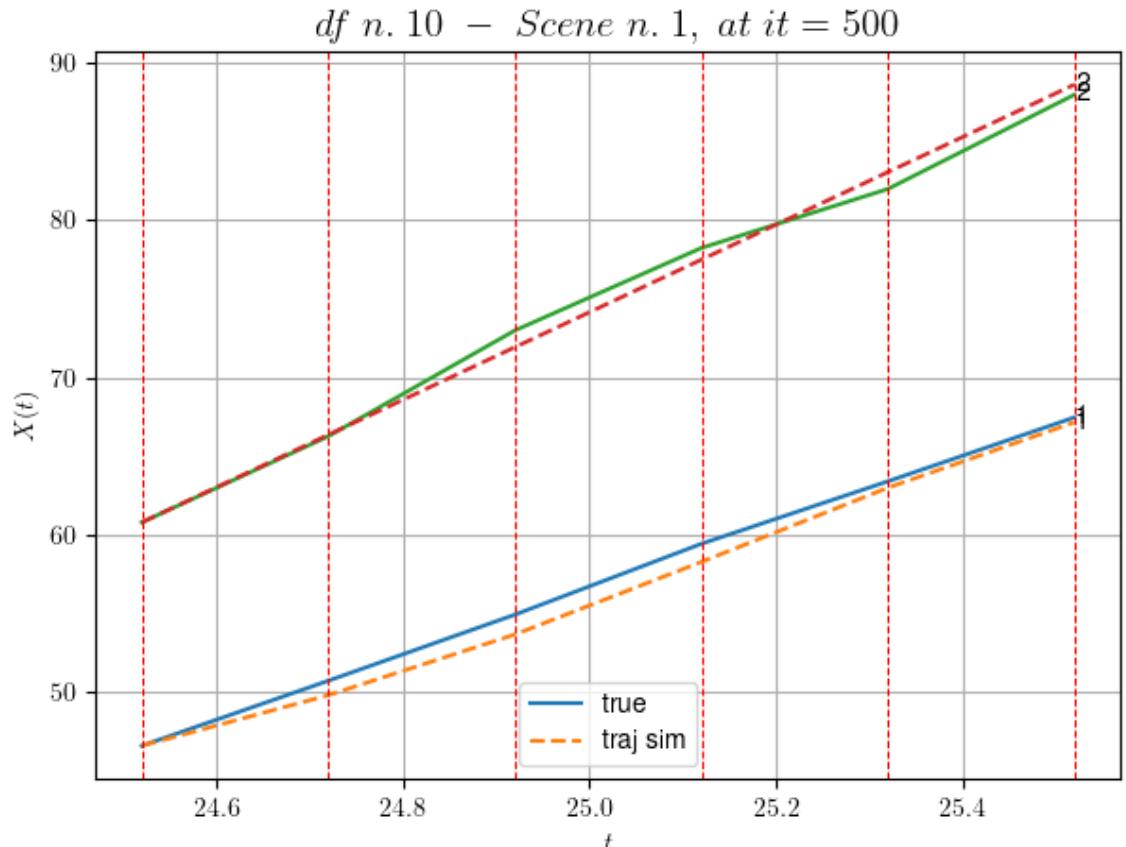
```
- Time interval n.3: [25.12, 25.32]
* y_true: [19.87142322]
* v_ann: [23.586177825927734, 27.84672922808639]
```

---

```
- Time interval n.4: [25.32, 25.52]
* y_true: [20.33168]
* v_ann: [20.82900047302246, 27.84672922808639]
```

---

```
* err= 0.6086103361595039
* Learning rate NN = 0.0003874204121530056
* diff = 0.008151923262851635
```



For scene 1/74

```
* use LR_NN=0.001 with err=1.4635688993100466 at it=24
* v0_scn_mean = 27.932860058946417
* MAE = 0.39413704691465357
```

---



---



---

df n.10, scene n.2/74

---



---

```
=====
We have 7 time intervals inside [34.92,36.32]
- Time interval n.0: [34.92, 35.12]
 * y_true: [23.68551506]
 * v_ann: [19.648386001586914, 25.102289962227644]

- Time interval n.1: [35.12, 35.32]
 * y_true: [19.89940705]
 * v_ann: [20.286502838134766, 25.102289962227644]

- Time interval n.2: [35.32, 35.52]
 * y_true: [19.9226572]
 * v_ann: [23.176197052001953, 25.102289962227644]

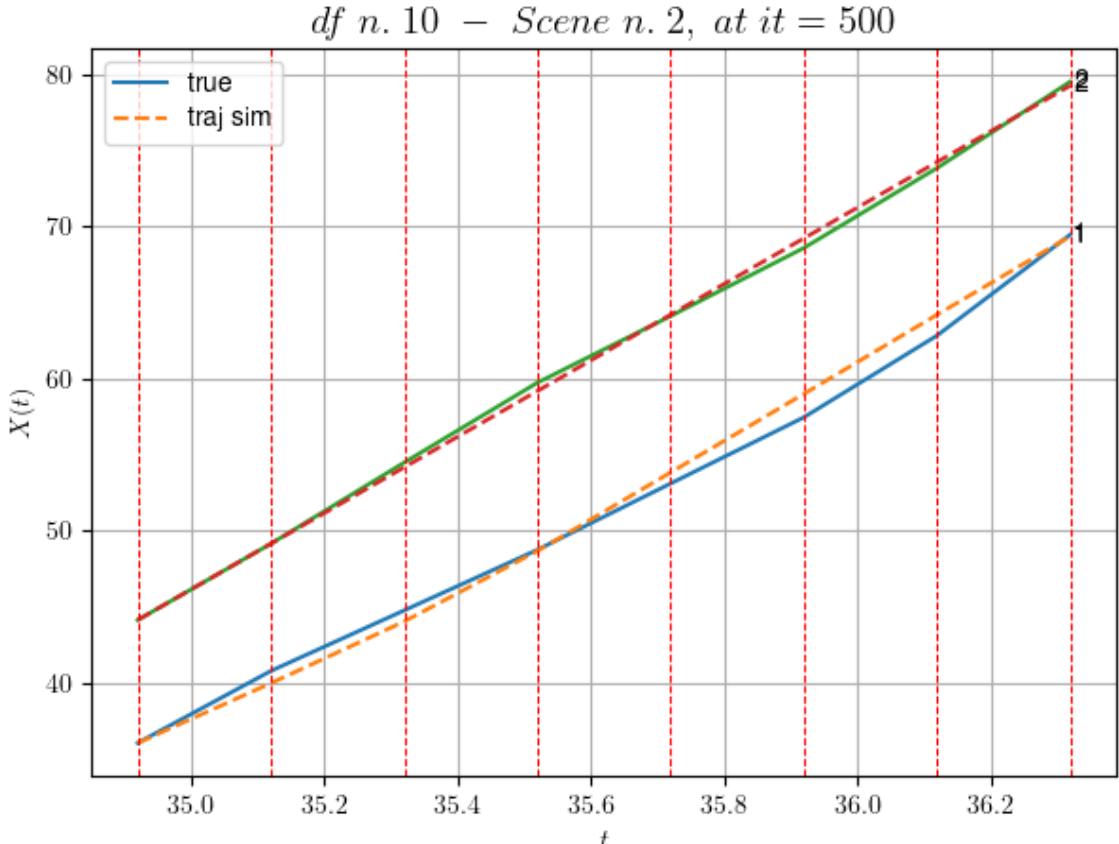
- Time interval n.3: [35.52, 35.72]
 * y_true: [21.80649804]
 * v_ann: [25.84223175048828, 25.102289962227644]

- Time interval n.4: [35.72, 35.92]
 * y_true: [21.75749887]
 * v_ann: [25.827266693115234, 25.102289962227644]

- Time interval n.5: [35.92, 36.12]
 * y_true: [26.91452163]
 * v_ann: [26.03665542602539, 25.102289962227644]

- Time interval n.6: [36.12, 36.32]
 * y_true: [33.17972928]
 * v_ann: [25.784757614135742, 25.102289962227644]

* err= 0.43833131553731774
* Learning rate NN = 1.2709323527815286e-05
* d:fff - 0.0014288482000105077
```



For scene 2/74

- \* use LR\_NN=5e-05 with err=9.058573176413105 at it=24
- \* v0\_scn\_mean = 25.29819836370107
- \* MAE = 0.43833131553731774

---



---

df n.10, scene n.3/74

---



---

We have 3 time intervals inside [41.32, 41.92]

- Time interval n.0: [41.32, 41.52]
  - \* y\_true: [27.9207748]
  - \* v\_ann: [29.652896881103516, 23.270817806163652]

---

- Time interval n.1: [41.52, 41.72]
  - \* y\_true: [27.55103886]
  - \* v\_ann: [27.642032623291016, 23.270817806163652]

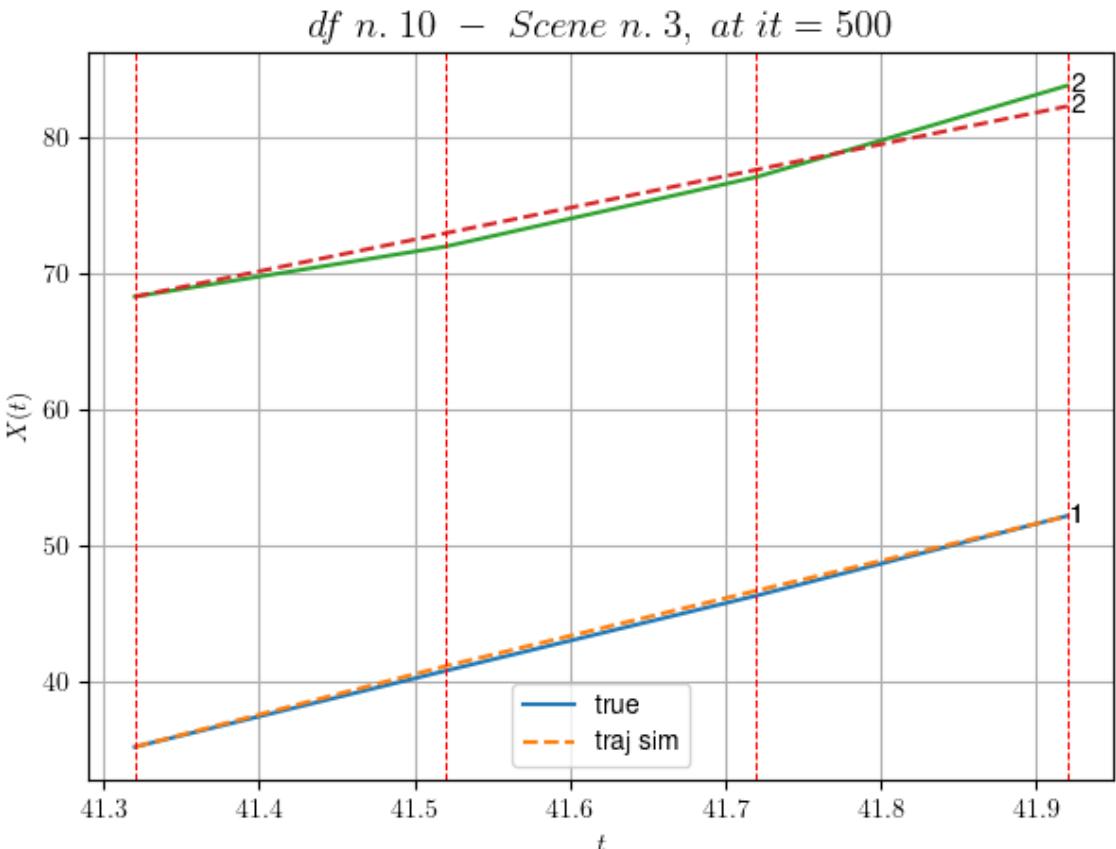
---

- Time interval n.2: [41.72, 41.92]
  - \* y\_true: [29.24138341]
  - \* v\_ann: [27.276155471801758, 23.270817806163652]

---

- \* err= 0.4743354834335039
- \* Learning rate NN = 5.904899080633186e-05

\* diff = 1.5410506698509963e-06



For scene 3/74

\* use LR\_NN=0.0001 with err=2.8177078391057515 at it=24  
 \* v0\_scn\_mean = 23.53998509386575  
 \* MAE = 0.4246920592276764

---



---

df n.10, scene n.4/74

---



---

We have 3 time intervals inside [56.92,57.52]

- Time interval n.0: [56.92, 57.12]
  - \* y\_true: [9.9463422]
  - \* v\_ann: [9.799099922180176, 28.436234116038488]

---

- Time interval n.1: [57.12, 57.32]
  - \* y\_true: [6.64401388]
  - \* v\_ann: [7.090527534484863, 28.436234116038488]

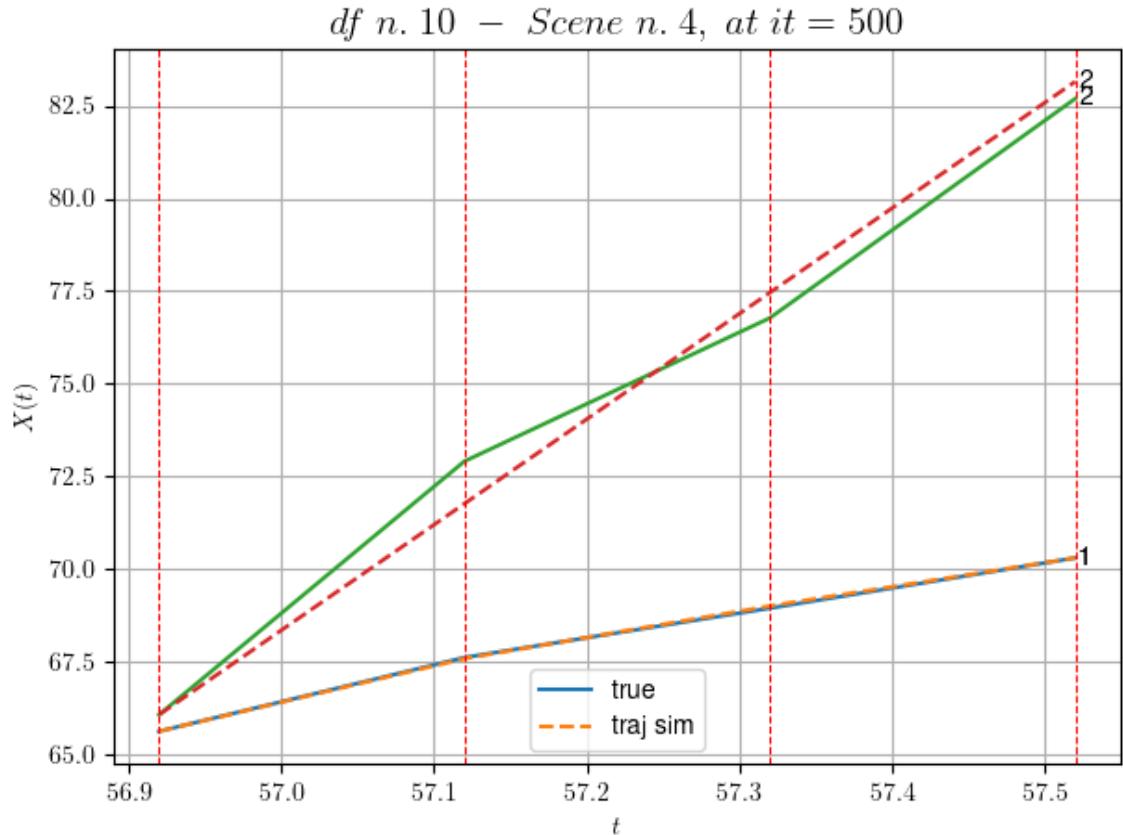
---

- Time interval n.2: [57.32, 57.52]
  - \* y\_true: [6.7779783]
  - \* v\_ann: [6.47955322265625, 28.436234116038488]

---

\* err= 0.2488050890906306

\* Learning rate NN = 0.0029524494893848896  
 \* diff = 7.999235554362327e-05



For scene 4/74

\* use LR\_NN=0.005 with err=0.6268003164751148 at it=24  
 \* v0\_scn\_mean = 28.49878475138538  
 \* MAE = 0.2488050890906306

---



---

df n.10, scene n.5/74

---



---

We have 4 time intervals inside [59.12,59.92]

- Time interval n.0: [59.12, 59.32]
  - \* y\_true: [7.04118507]
  - \* v\_ann: [7.205764293670654, 24.64241489798159]

---

- Time interval n.1: [59.32, 59.52]
  - \* y\_true: [9.13519325]
  - \* v\_ann: [6.998401165008545, 24.64241489798159]

---

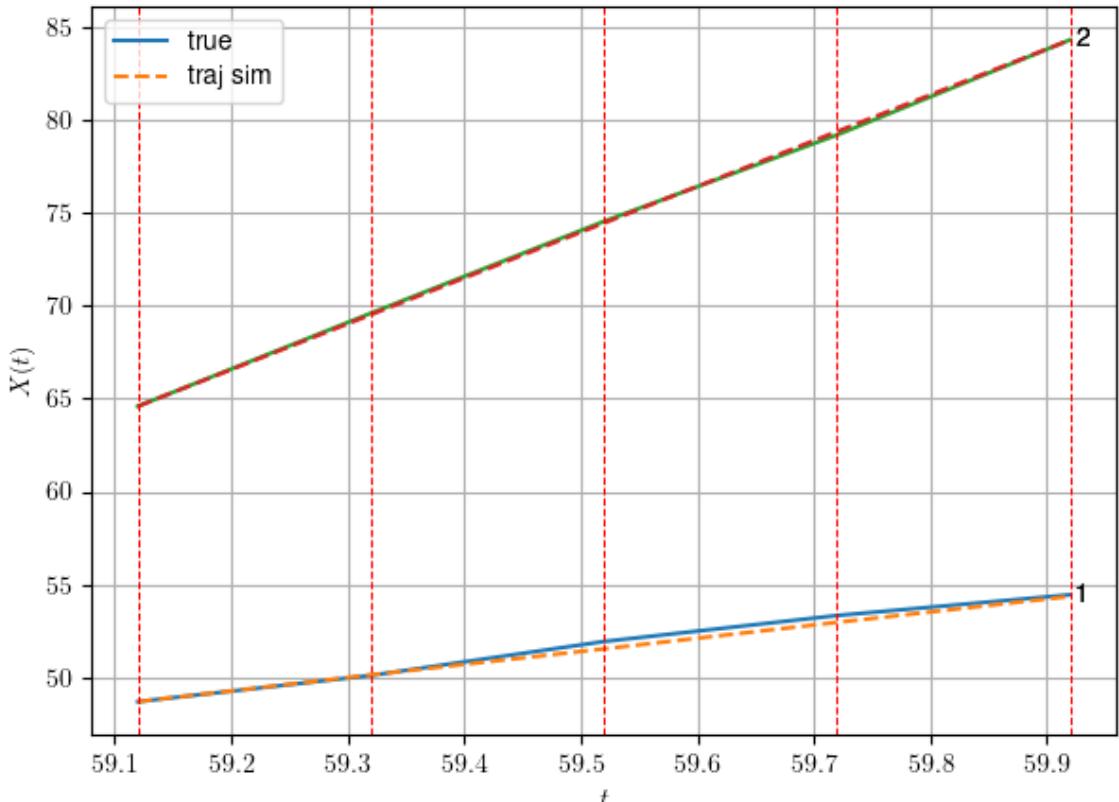
- Time interval n.2: [59.52, 59.72]
  - \* y\_true: [7.00075911]
  - \* v\_ann: [7.132529258728027, 24.64241489798159]

- Time interval n.3: [59.72, 59.92]
  - \* y\_true: [5.57780303]
  - \* v\_ann: [6.975841522216797, 24.64241489798159]

---

- \* err= 0.03494566531283843
- \* Learning rate NN = 4.7829678806010634e-05
- \* diff = 0.0003925213504578154

df n. 10 – Scene n. 5, at it = 500



For scene 5/74

- \* use LR\_NN=0.0001 with err=3.700266054050254 at it=24
- \* v0\_scn\_mean = 24.856718302021676
- \* MAE = 0.03494566531283843

---



---

df n.10, scene n.6/74

We have 5 time intervals inside [64.92,65.92]

- Time interval n.0: [64.92, 65.12]
  - \* y\_true: [5.04006152]
  - \* v\_ann: [8.676461219787598, 23.26250029424366]

---

- Time interval n.1: [65.12, 65.32]
  - \* y\_true: [3.97005162]
  - \* v\_ann: [9.229909896850586, 23.26250029424366]

---

```

- Time interval n.2: [65.32, 65.52]

* y_true: [3.01004135]

* v_ann: [9.92859935760498, 23.26250029424366]

```

```

- Time interval n.3: [65.52, 65.72]

* y_true: [9.29806192]

* v_ann: [10.599226951599121, 23.26250029424366]

```

```

- Time interval n.4: [65.72, 65.92]

* y_true: [24.93048749]

* v_ann: [11.202874183654785, 23.26250029424366]

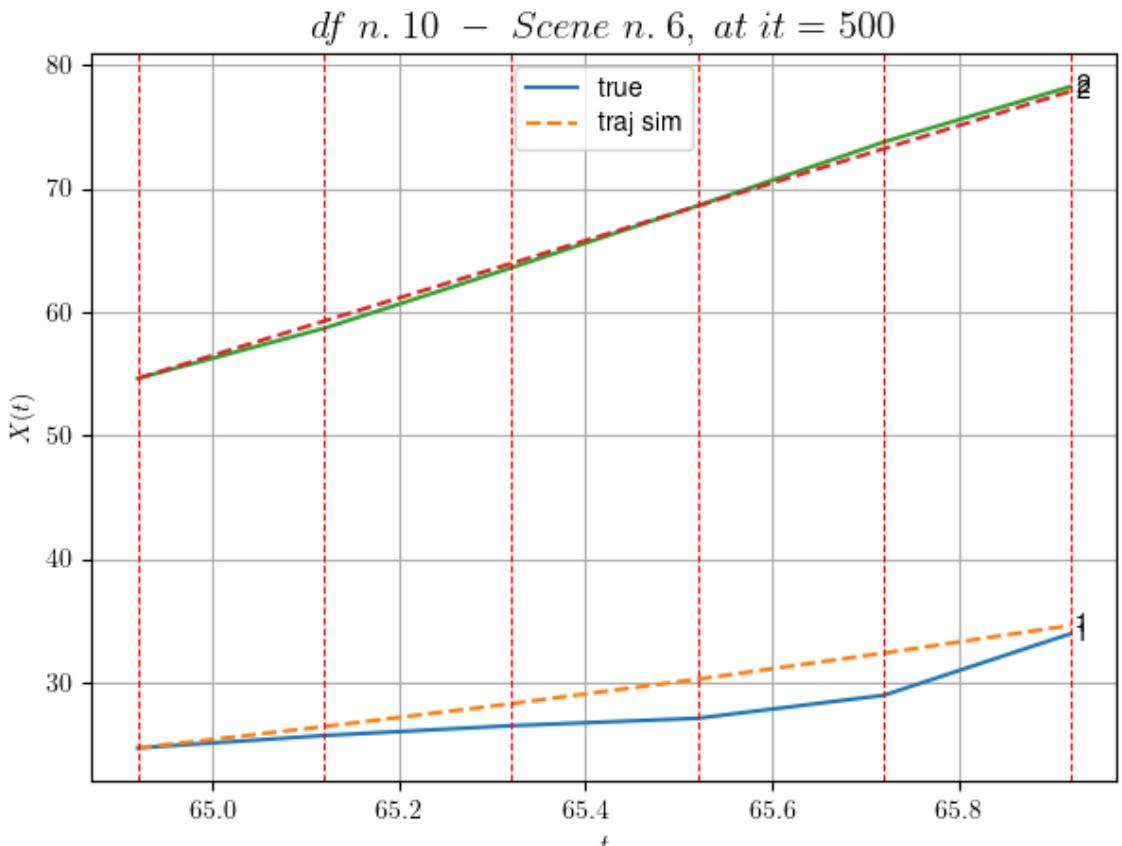
```

```

* err= 2.232953606674429

* Learning rate NN = 1.9371018424862996e-05

* diff = 0.027424967504951603
```



For scene 6/74

```

* use LR_NN=5e-05 with err=9.927512342470742 at it=24
* v0_scn_mean = 23.53200028242218
* MAE = 2.2269761343785204
=====
```

```

=====

=====

df n.10, scene n.7/74
=====
```

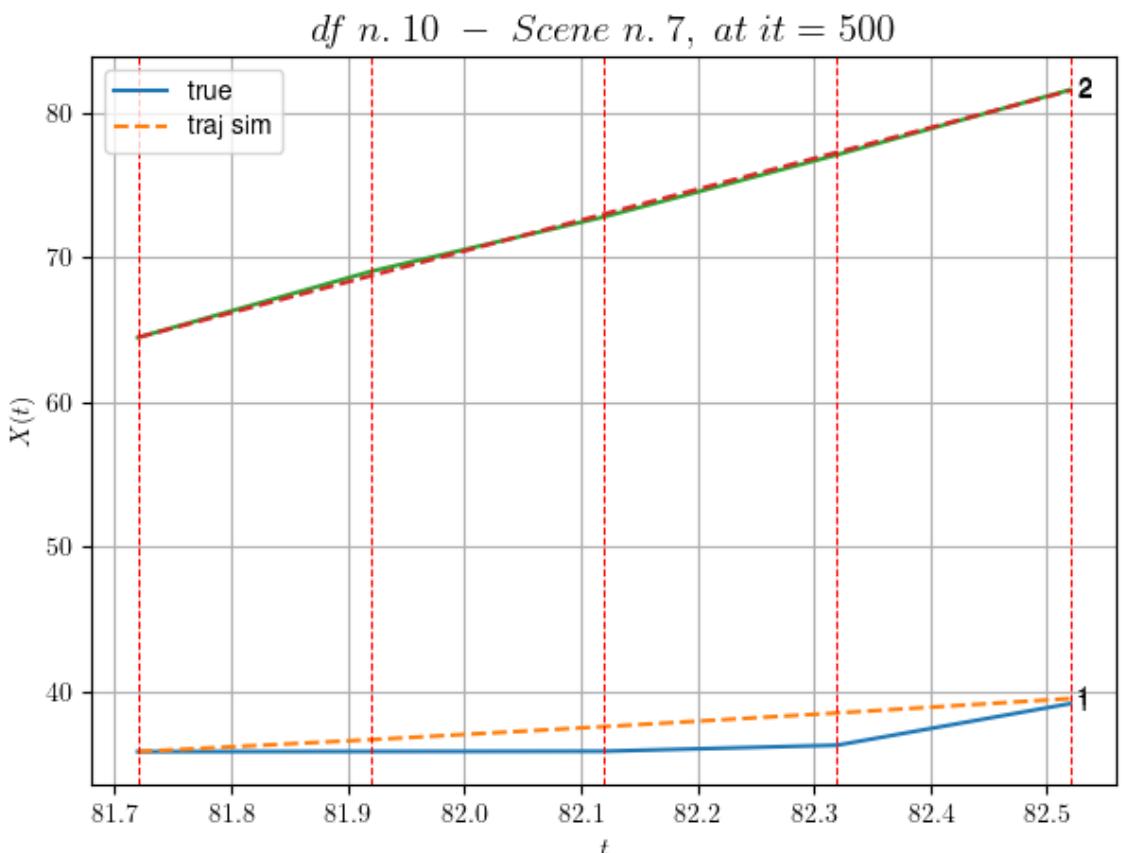
```
=====
We have 4 time intervals inside [81.72,82.52]
- Time interval n.0: [81.72, 81.92]
 * y_true: [0.07201947]
 * v_ann: [4.153165340423584, 21.36406302671324]

- Time interval n.1: [81.92, 82.12]
 * y_true: [0.07201947]
 * v_ann: [4.507704734802246, 21.36406302671324]

- Time interval n.2: [82.12, 82.32]
 * y_true: [2.09202578]
 * v_ann: [4.7257080078125, 21.36406302671324]

- Time interval n.3: [82.32, 82.52]
 * y_true: [14.40039965]
 * v_ann: [4.9938883781433105, 21.36406302671324]

* err= 0.8824171937821781
* Learning rate NN = 4.7829678806010634e-05
* diff = 0.00022198077108992464
```



For scene 7/74

- \* use LR\_NN=0.0001 with err=9.988282946393714 at it=24
- \* v0\_scn\_mean = 21.709500505578543
- \* MAE = 0.8726800338807696

```
=====
=====
```

df n.10, scene n.8/74

```
=====
=====
```

We have 8 time intervals inside [85.72,87.32]

- Time interval n.0: [85.72, 85.92]
  - \* y\_true: [0.07201947]
  - \* v\_ann: [6.532825946807861, 23.199951303802223]

```

```

- Time interval n.1: [85.92, 86.12]
  - \* y\_true: [4.16376399]
  - \* v\_ann: [12.281936645507812, 23.199951303802223]

```

```

- Time interval n.2: [86.12, 86.32]
  - \* y\_true: [21.51063868]
  - \* v\_ann: [17.950441360473633, 23.199951303802223]

```

```

- Time interval n.3: [86.32, 86.52]
  - \* y\_true: [18.36066104]
  - \* v\_ann: [18.70672035217285, 23.199951303802223]

```

```

- Time interval n.4: [86.52, 86.72]
  - \* y\_true: [21.67096239]
  - \* v\_ann: [22.22316551208496, 23.199951303802223]

```

```

- Time interval n.5: [86.72, 86.92]
  - \* y\_true: [26.10134836]
  - \* v\_ann: [21.442276000976562, 23.199951303802223]

```

```

- Time interval n.6: [86.92, 87.12]
  - \* y\_true: [22.59141969]
  - \* v\_ann: [21.18492889404297, 23.199951303802223]

```

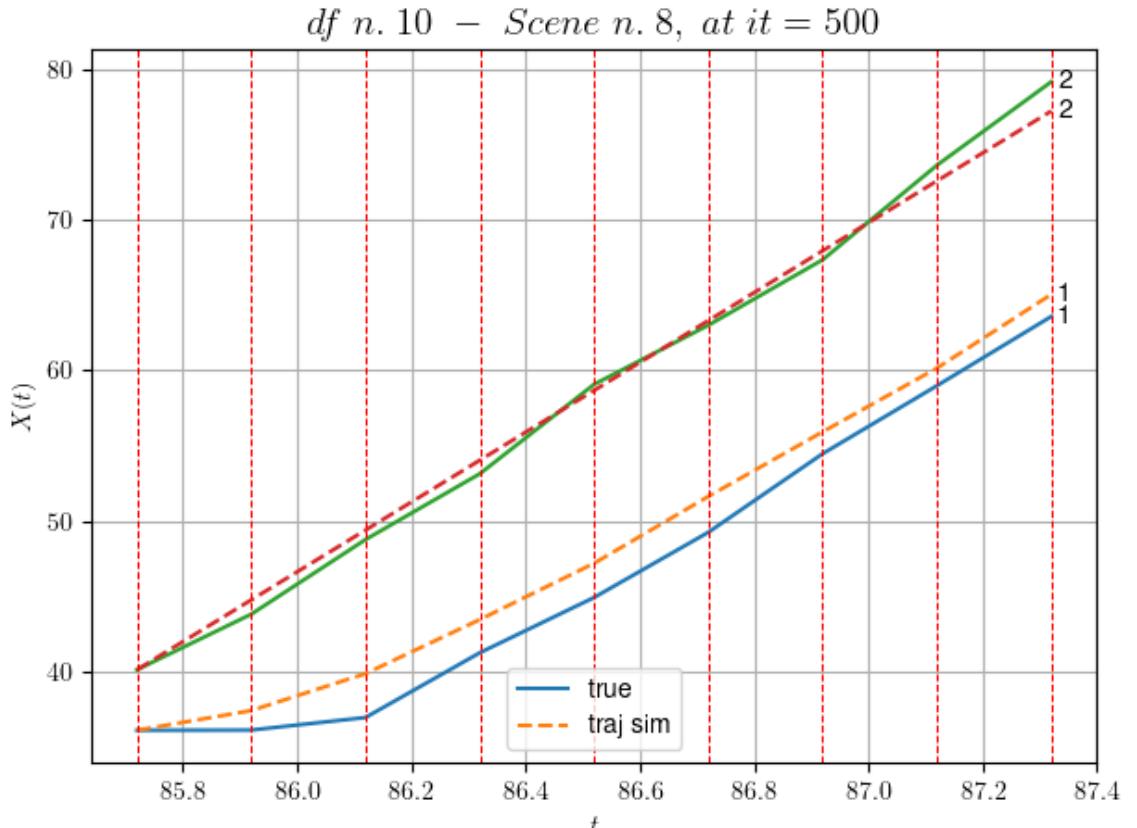
```

- Time interval n.7: [87.12, 87.32]
  - \* y\_true: [22.98166651]
  - \* v\_ann: [24.472318649291992, 23.199951303802223]

```

```

- \* err= 2.1717161884271556
- \* Learning rate NN = 0.00020589104678947479
- \* diff = 0.011596330769546803



For scene 8/74

- \* use LR\_NN=0.001 with err=19.651351878339366 at it=24
- \* v0\_scn\_mean = 23.471953251598045
- \* MAE = 1.4728209776029113

---



---

df n.10, scene n.9/74

---



---

We have 10 time intervals inside [97.32, 99.32]

- Time interval n.0: [97.32, 97.52]
  - \* y\_true: [11.48366043]
  - \* v\_ann: [4.298468589782715, 19.018016829365095]

---

- Time interval n.1: [97.52, 97.72]
  - \* y\_true: [0.07201947]
  - \* v\_ann: [3.944699287414551, 19.018016829365095]

---

- Time interval n.2: [97.72, 97.92]
  - \* y\_true: [7.07479559]
  - \* v\_ann: [11.255659103393555, 19.018016829365095]

---

- Time interval n.3: [97.92, 98.12]
  - \* y\_true: [20.40065046]

```
* v_ann: [16.021831512451172, 19.018016829365095]
```

```
- Time interval n.4: [98.12, 98.32]
* y_true: [12.25045529]
* v_ann: [14.055105209350586, 19.018016829365095]
```

```
- Time interval n.5: [98.32, 98.52]
* y_true: [19.05081256]
* v_ann: [16.954204559326172, 19.018016829365095]
```

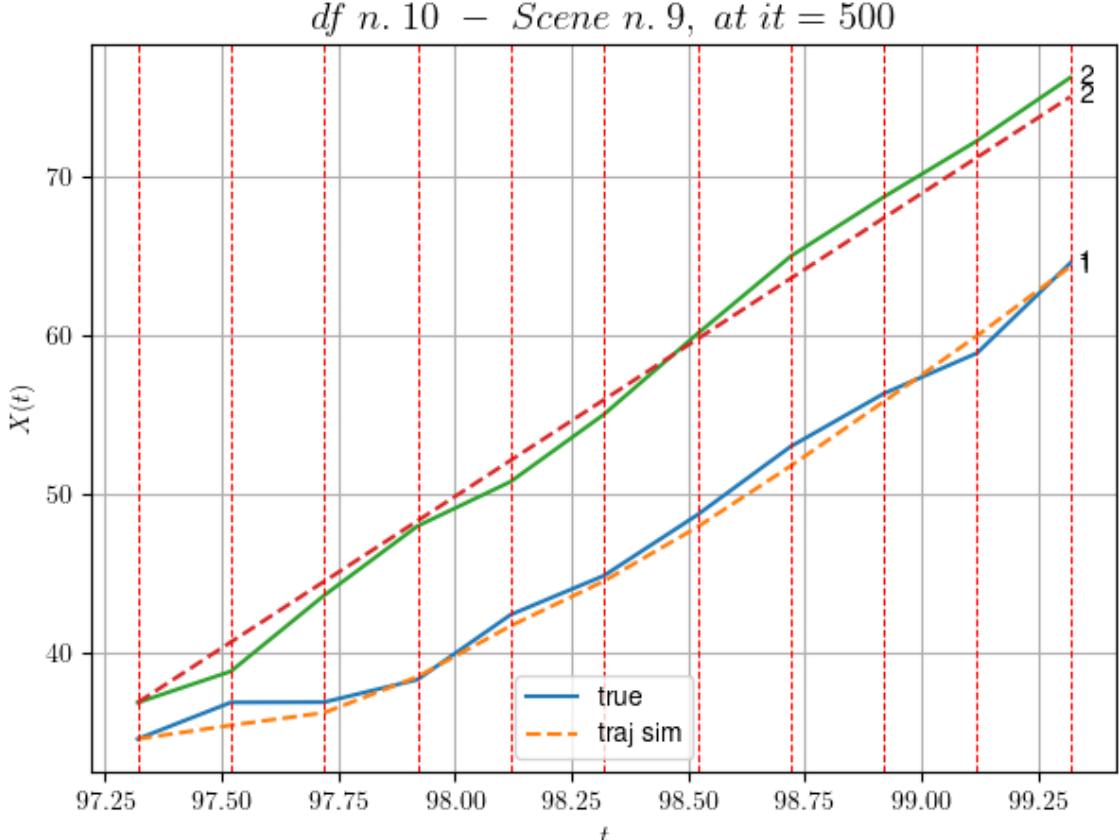
```
- Time interval n.6: [98.52, 98.72]
* y_true: [21.45107875]
* v_ann: [19.133451461791992, 19.018016829365095]
```

```
- Time interval n.7: [98.72, 98.92]
* y_true: [16.6509662]
* v_ann: [20.240924835205078, 19.018016829365095]
```

```
- Time interval n.8: [98.92, 99.12]
* y_true: [12.70081781]
* v_ann: [20.681537628173828, 19.018016829365095]
```

```
- Time interval n.9: [99.12, 99.32]
* y_true: [28.30208991]
* v_ann: [21.736879348754883, 19.018016829365095]
```

```
* err= 0.90541265712095
* Learning rate NN = 6.754255446139723e-05
* diff = 0 0024084016017284004
```



For scene 9/74

- \* use LR\_NN=0.0005 with err=79.5321528022906 at it=24
- \* v0\_scn\_mean = 19.457296156106707
- \* MAE = 0.8233866428755308

---



---

df n.10, scene n.10/74

---



---

We have 5 time intervals inside [100.52,101.52]

- Time interval n.0: [100.52, 100.72]
  - \* y\_true: [15.44102969]
  - \* v\_ann: [20.201148986816406, 19.67599361695483]

---

- Time interval n.1: [100.72, 100.92]
  - \* y\_true: [24.7218456]
  - \* v\_ann: [19.222312927246094, 19.67599361695483]

---

- Time interval n.2: [100.92, 101.12]
  - \* y\_true: [19.48315215]
  - \* v\_ann: [21.28451156616211, 19.67599361695483]

---

- Time interval n.3: [101.12, 101.32]
  - \* y\_true: [21.76213859]

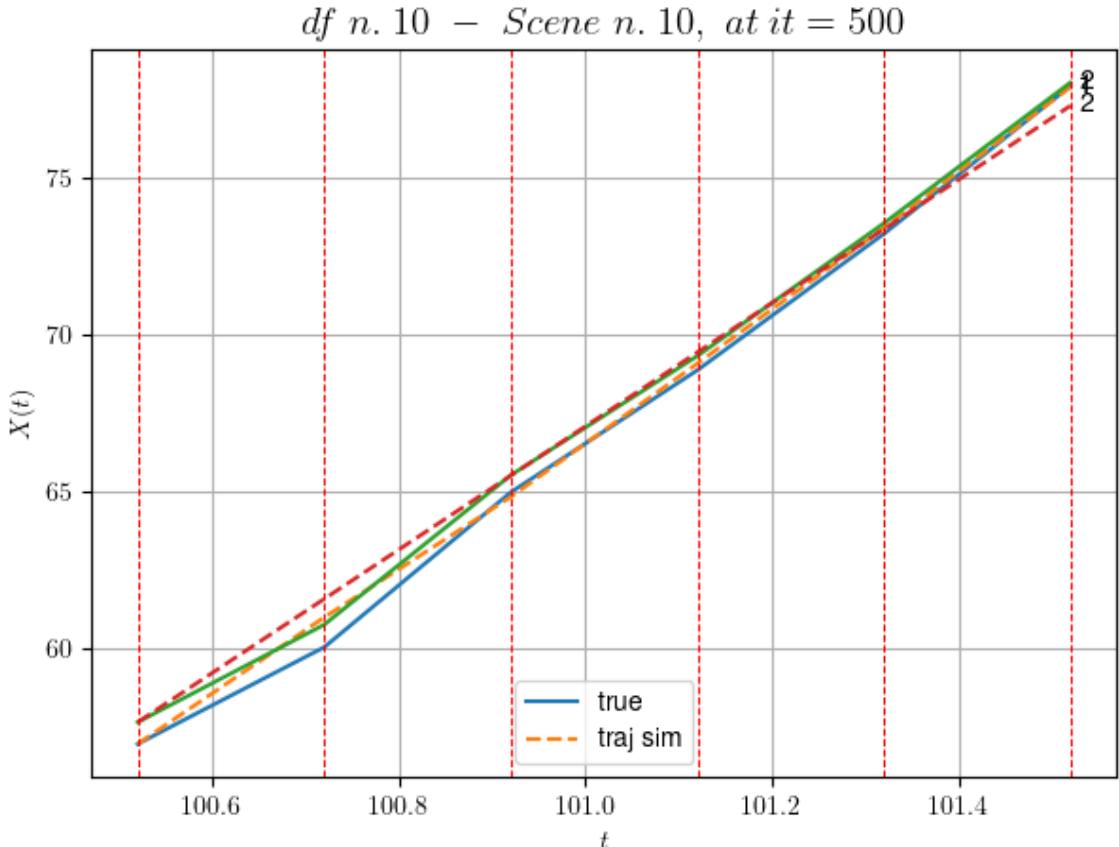
```
* v_ann: [21.619422912597656, 19.67599361695483]
```

---

```
- Time interval n.4: [101.32, 101.52]
* y_true: [23.58257994]
* v_ann: [22.510324478149414, 19.67599361695483]
```

---

```
* err= 0.1899774136558371
* Learning rate NN = 0.0019371019443497062
* diff = 0.0012551517045061855
```



For scene 10/74

```
* use LR_NN=0.005 with err=18.735202283439378 at it=24
* v0_scn_mean = 20.088953872197596
* MAE = 0.1899774136558371
```

---



---

df n.10, scene n.11/74

---



---

We have 4 time intervals inside [103.72, 104.52]

```
- Time interval n.0: [103.72, 103.92]
* y_true: [18.3928945]
* v_ann: [17.588651657104492, 24.24265454583431]
```

---

```
- Time interval n.1: [103.92, 104.12]
```

```
* y_true: [16.70145174]
* v_ann: [17.966068267822266, 24.24265454583431]
```

---

```
- Time interval n.2: [104.12, 104.32]
```

```
* y_true: [20.23196797]
```

```
* v_ann: [18.879638671875, 24.24265454583431]
```

---

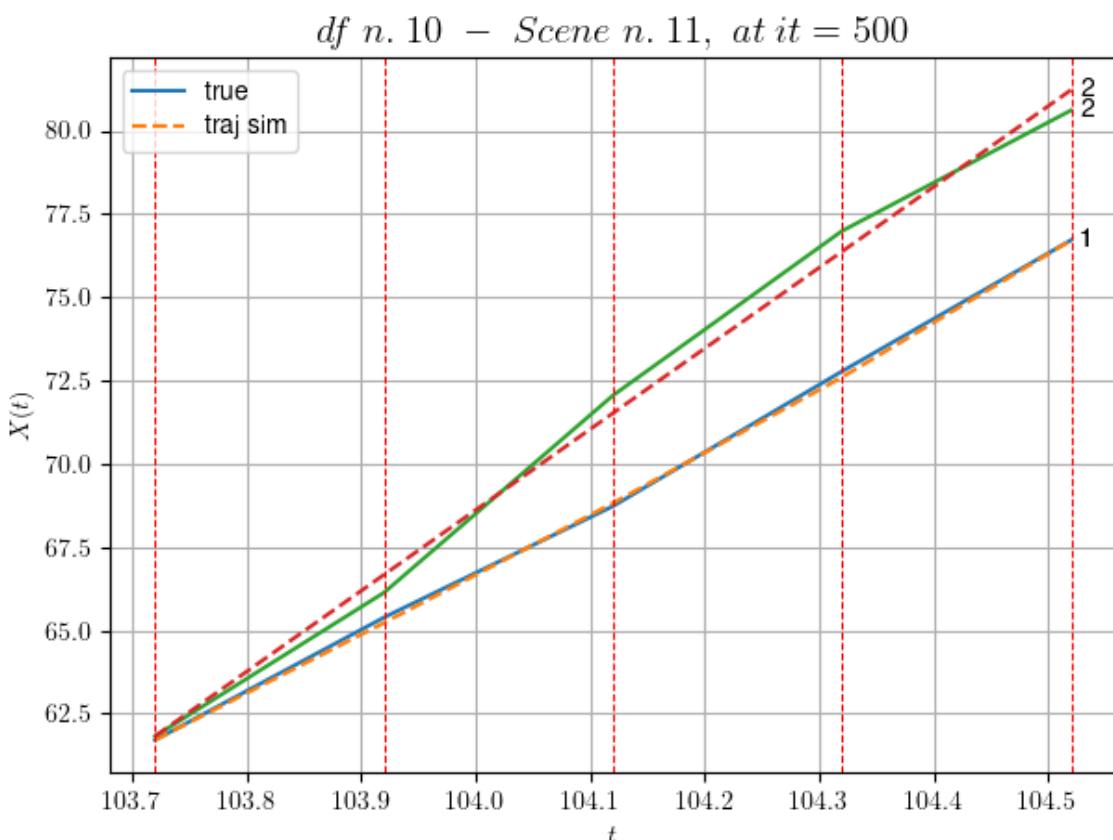
```
- Time interval n.3: [104.32, 104.52]
```

```
* y_true: [19.68212312]
```

```
* v_ann: [20.532987594604492, 24.24265454583431]
```

---

```
* err= 0.13928724175561827
* Learning rate NN = 0.002391484100371599
* diff = 6.321645148335553e-05
```



For scene 11/74

```
* use LR_NN=0.005 with err=4.2374443765344205 at it=24
```

```
* v0_scn_mean = 24.472948363956885
```

```
* MAE = 0.1388457182940918
```

---



---



---

df n.10, scene n.12/74

---



---



---



---



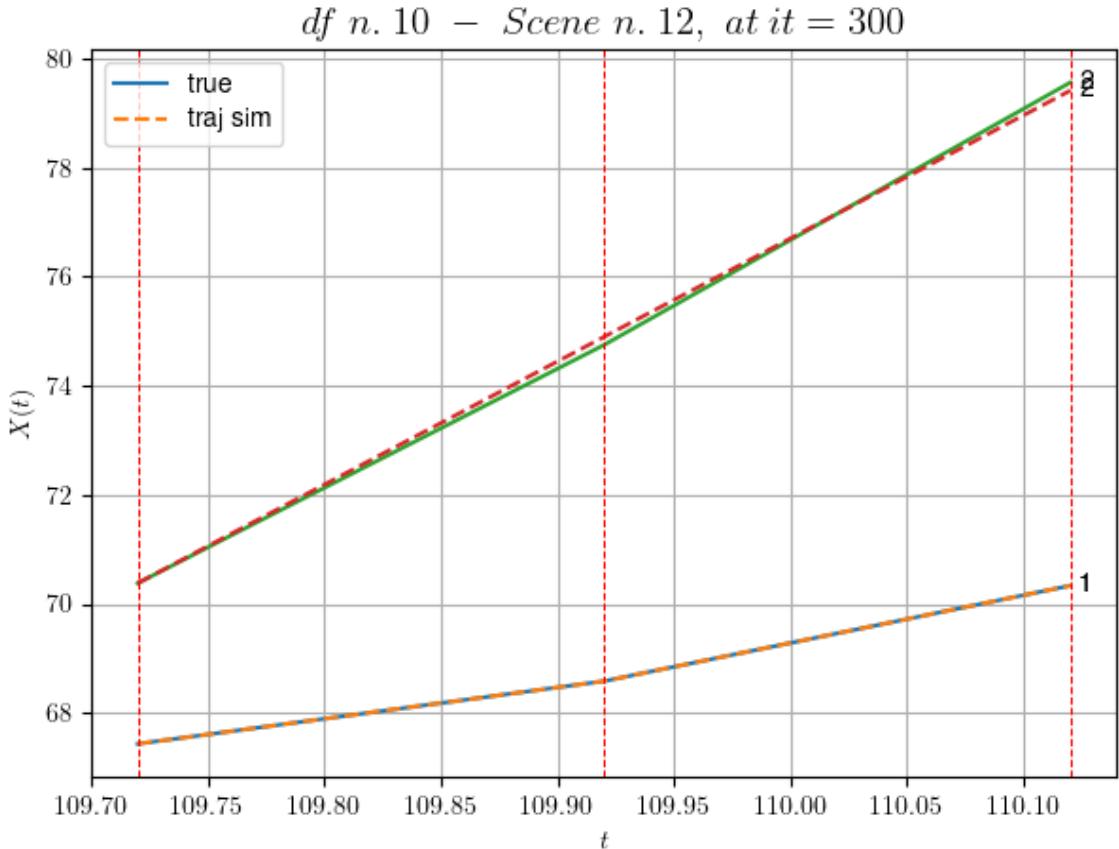
---



---

We have 2 time intervals inside [109.72,110.12]

```
* err= 0.007304925782706352
* Learning rate NN = 0.008099999278783798
* diff = 1.8110805210039271e-07
```



For scene 12/74

```
* use LR_NN=0.01 with err=1.764585816564491 at it=24
* v0_scn_mean = 23.086256854775637
* MAE = 0.006643808486105618
```

---



---

df n.10, scene n.13/74

---



---

We have 8 time intervals inside [116.72, 118.32]

- Time interval n.0: [116.72, 116.92]
  - \* y\_true: [1.82657583]
  - \* v\_ann: [4.781339645385742, 19.612707397568297]

---

- Time interval n.1: [116.92, 117.12]
  - \* y\_true: [1.82657583]
  - \* v\_ann: [3.9722249507904053, 19.612707397568297]

---

- Time interval n.2: [117.12, 117.32]
  - \* y\_true: [1.82657583]
  - \* v\_ann: [5.934849262237549, 19.612707397568297]

---

- Time interval n.3: [117.32, 117.52]  
\* y\_true: [1.82657583]  
\* v\_ann: [7.879629135131836, 19.612707397568297]

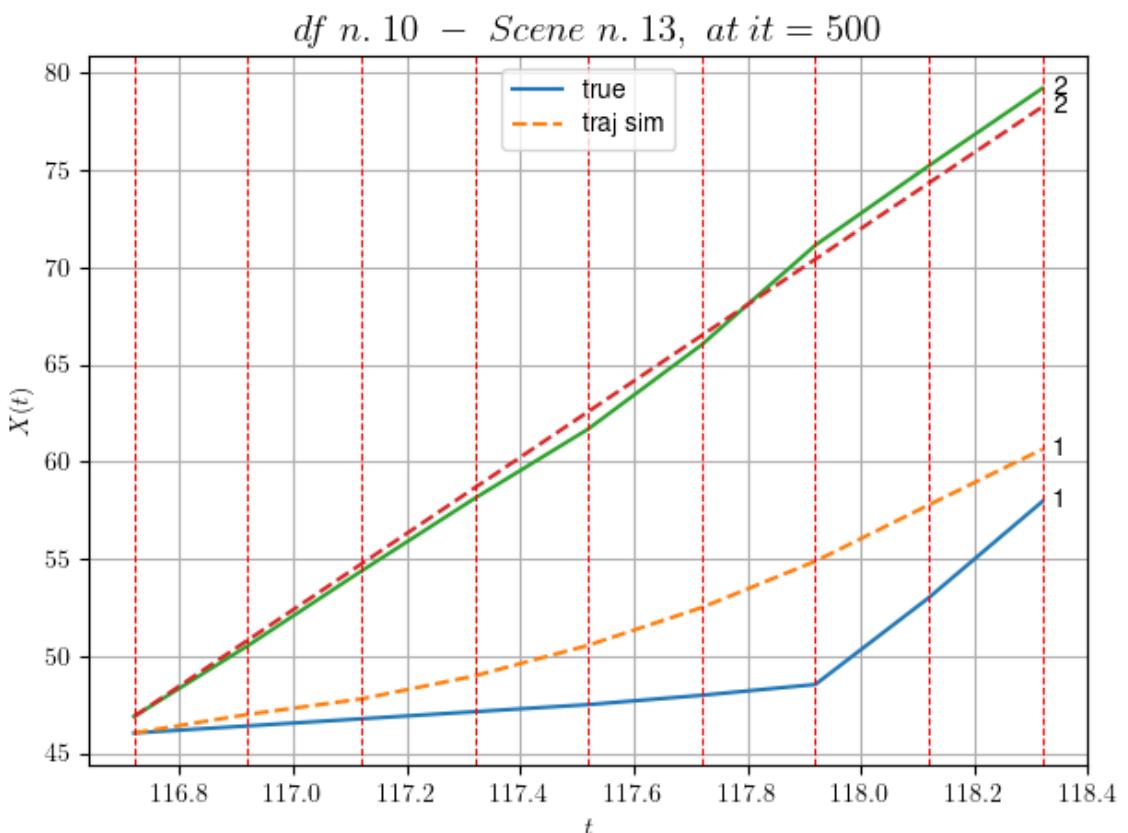
- Time interval n.4: [117.52, 117.72]  
\* y\_true: [2.40008723]  
\* v\_ann: [9.713780403137207, 19.612707397568297]

- Time interval n.5: [117.72, 117.92]  
\* y\_true: [2.78242816]  
\* v\_ann: [11.915412902832031, 19.612707397568297]

- Time interval n.6: [117.92, 118.12]  
\* y\_true: [22.34249066]  
\* v\_ann: [14.50441837310791, 19.612707397568297]

- Time interval n.7: [118.12, 118.32]  
\* y\_true: [24.77146428]  
\* v\_ann: [14.320050239562988, 19.612707397568297]

\* err= 6.024594688750565  
\* Learning rate NN = 2.058910467894748e-06  
\* diff = 0.012595815764088414



For scene 13/74  
 \* use LR\_NN=1e-05 with err=48.00860705859293 at it=24  
 \* v0\_scn\_mean = 20.02819910158607  
 \* MAE = 6.024594688750565

---



---

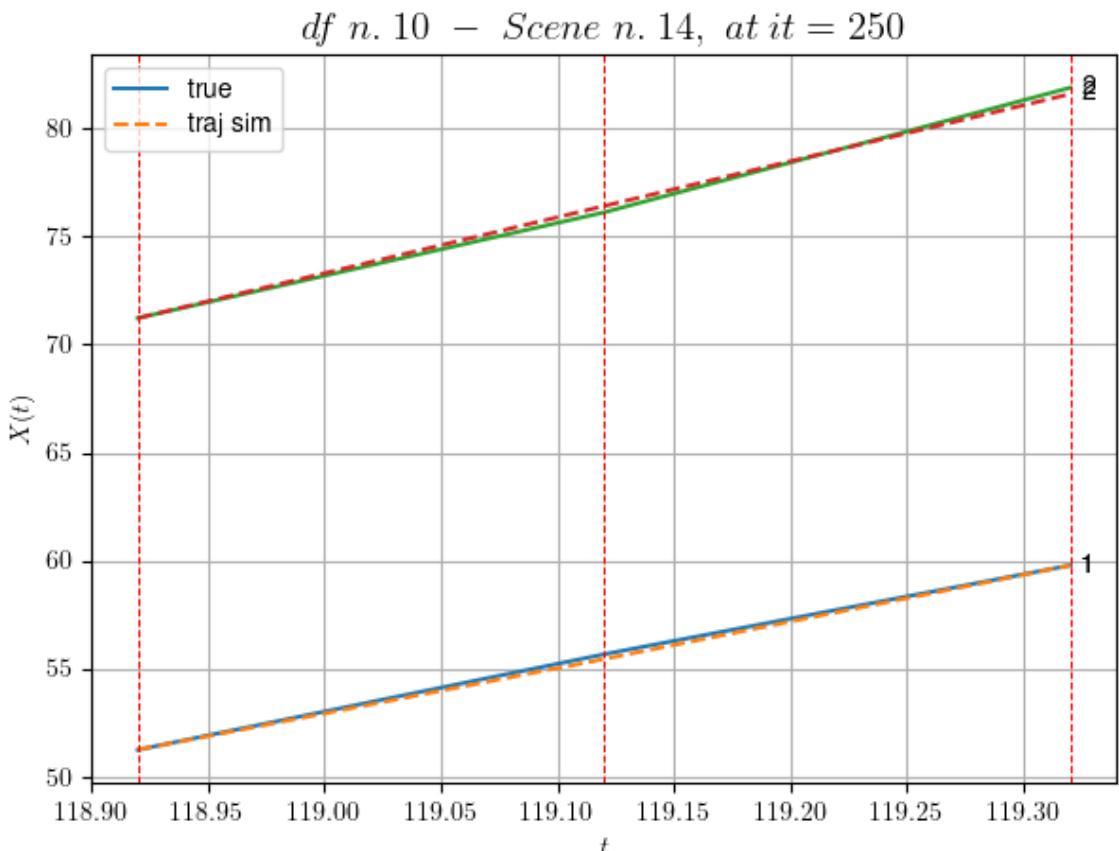
df n.10, scene n.14/74

---



---

We have 2 time intervals inside [118.92,119.32]  
 \* err= 0.036743897282144125  
 \* Learning rate NN = 8.999999408842996e-05  
 \* diff = 9.755694656277125e-07



For scene 14/74  
 \* use LR\_NN=0.0001 with err=0.4999383781104757 at it=24  
 \* v0\_scn\_mean = 26.291970791664987  
 \* MAE = 0.0340799420702915

---



---

df n.10, scene n.15/74

---

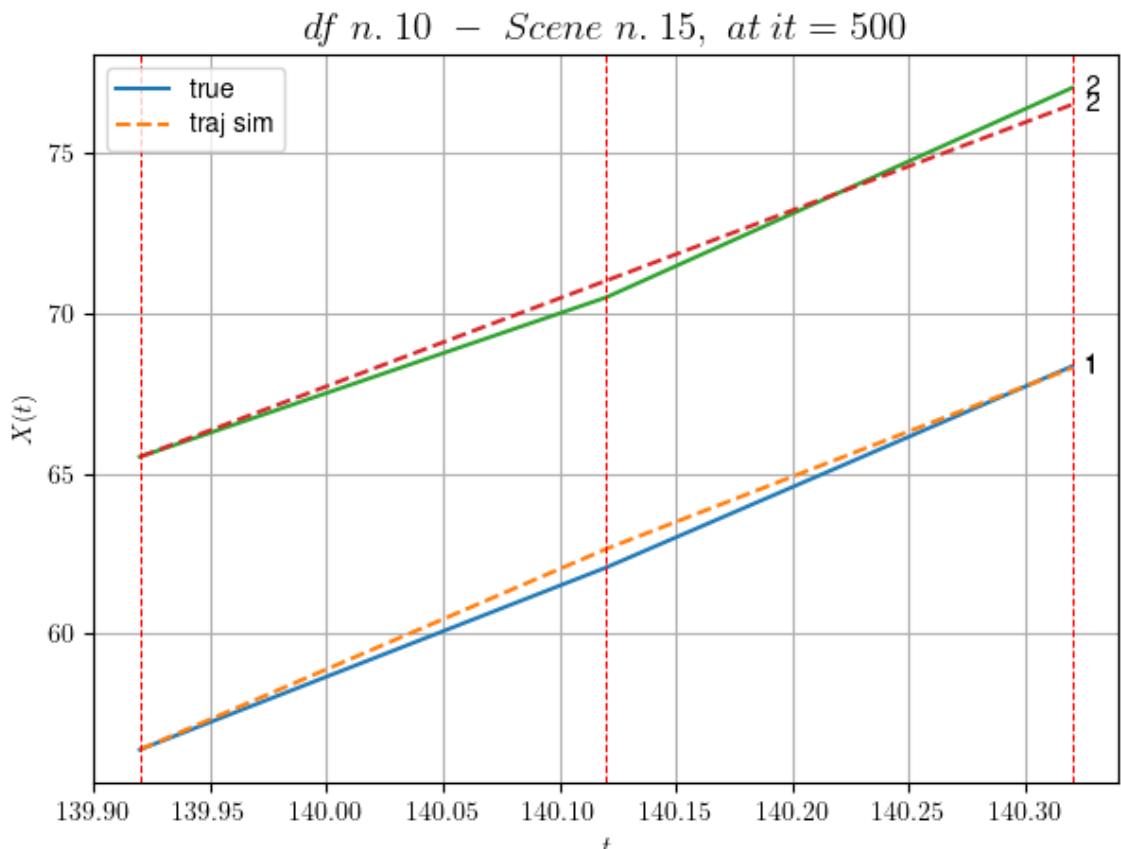


---

We have 2 time intervals inside [139.92,140.32]  
 - Time interval n.0: [139.92, 140.12]  
 \* y\_true: [28.34197471]  
 \* v\_ann: [31.227697372436523, 27.422660948668764]

```
- Time interval n.1: [140.12, 140.32]
* y_true: [31.34257406]
* v_ann: [28.18239974975586, 27.422660948668764]
```

```
* err= 0.14687109699914874
* Learning rate NN = 0.00036449998151510954
* diff = 0.00015368299815116115
```



For scene 15/74

```
* use LR_NN=0.0005 with err=0.3065642276751993 at it=24
* v0_scn_mean = 27.525754510702427
* MAE = 0.14520631290827574
```

---



---

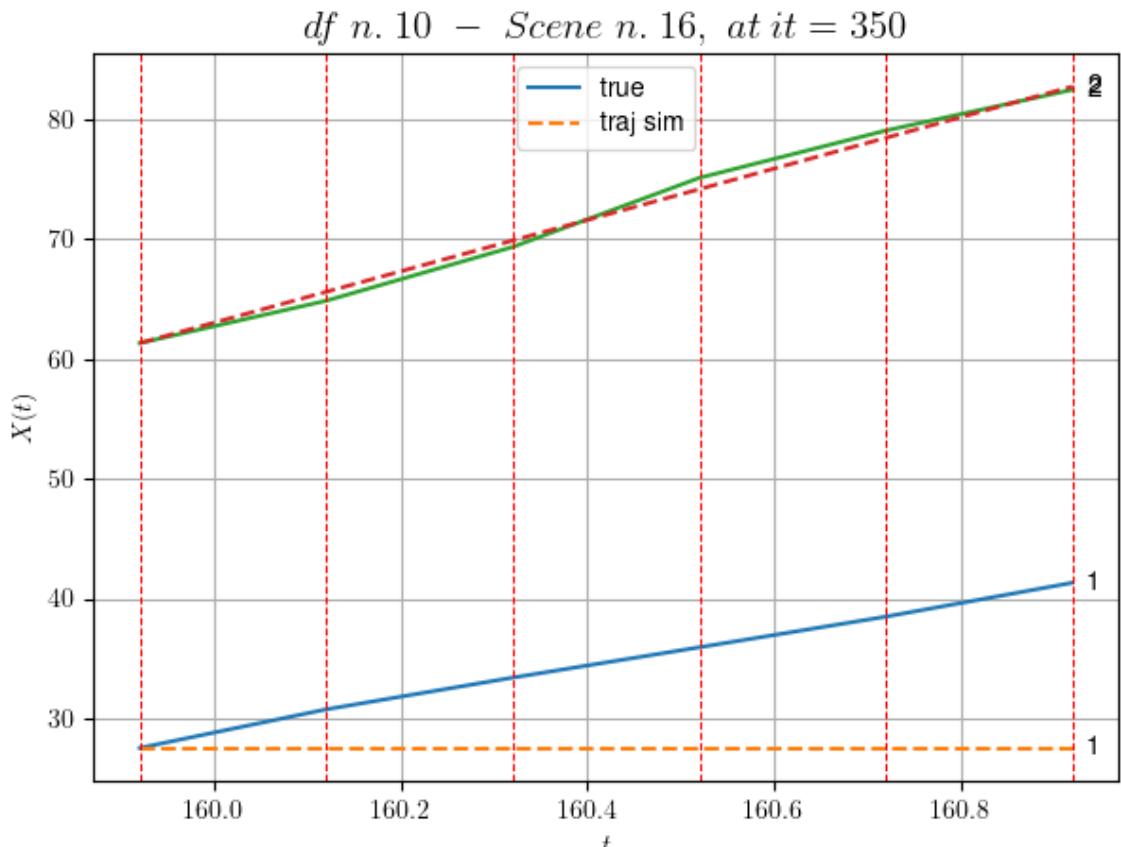
df n.10, scene n.16/74

---



---

```
We have 5 time intervals inside [159.92,160.92]
* err= 35.695102734324294
* Learning rate NN = 0.000531440949998796
* diff = 1.148346981949544e-07
```



For scene 16/74

- \* use LR\_NN=0.001 with err=13.117409497481278 at it=24
  - \* v0\_scn\_mean = 21.918462185505625
  - \* MAE = 35.68837388094787
- 
- 

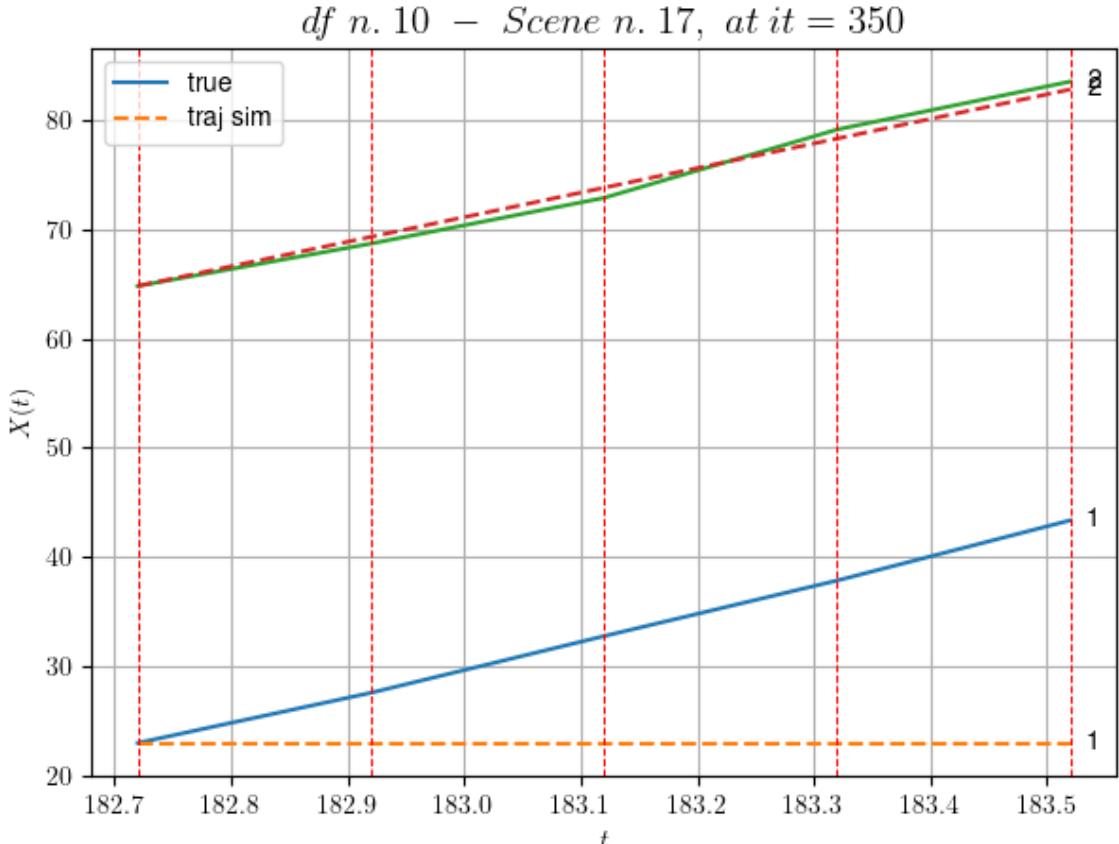
df n.10, scene n.17/74

---

---

We have 4 time intervals inside [182.72,183.52]

- \* err= 75.60051610246508
- \* Learning rate NN = 5.904899080633186e-05
- \* diff = 1.6533937241547392e-07



For scene 17/74

- \* use LR\_NN=0.0001 with err=6.224273677730444 at it=24
- \* v0\_scn\_mean = 22.930702447697936
- \* MAE = 75.57268127929402

---



---

df n.10, scene n.18/74

---



---

We have 6 time intervals inside [188.92, 190.12]

- Time interval n.0: [188.92, 189.12]
  - \* y\_true: [25.11758737]
  - \* v\_ann: [0.004002764355391264, 27.06160992268697]

---

- Time interval n.1: [189.12, 189.32]
  - \* y\_true: [24.28121512]
  - \* v\_ann: [0.0037428629584610462, 27.06160992268697]

---

- Time interval n.2: [189.32, 189.52]
  - \* y\_true: [24.90146436]
  - \* v\_ann: [0.004409081768244505, 27.06160992268697]

---

- Time interval n.3: [189.52, 189.72]
  - \* y\_true: [24.10172122]

\* v\_ann: [0.00174479850102216, 27.06160992268697]

---

- Time interval n.4: [189.72, 189.92]  
 \* y\_true: [29.66248113]  
 \* v\_ann: [0.00045009961468167603, 27.06160992268697]

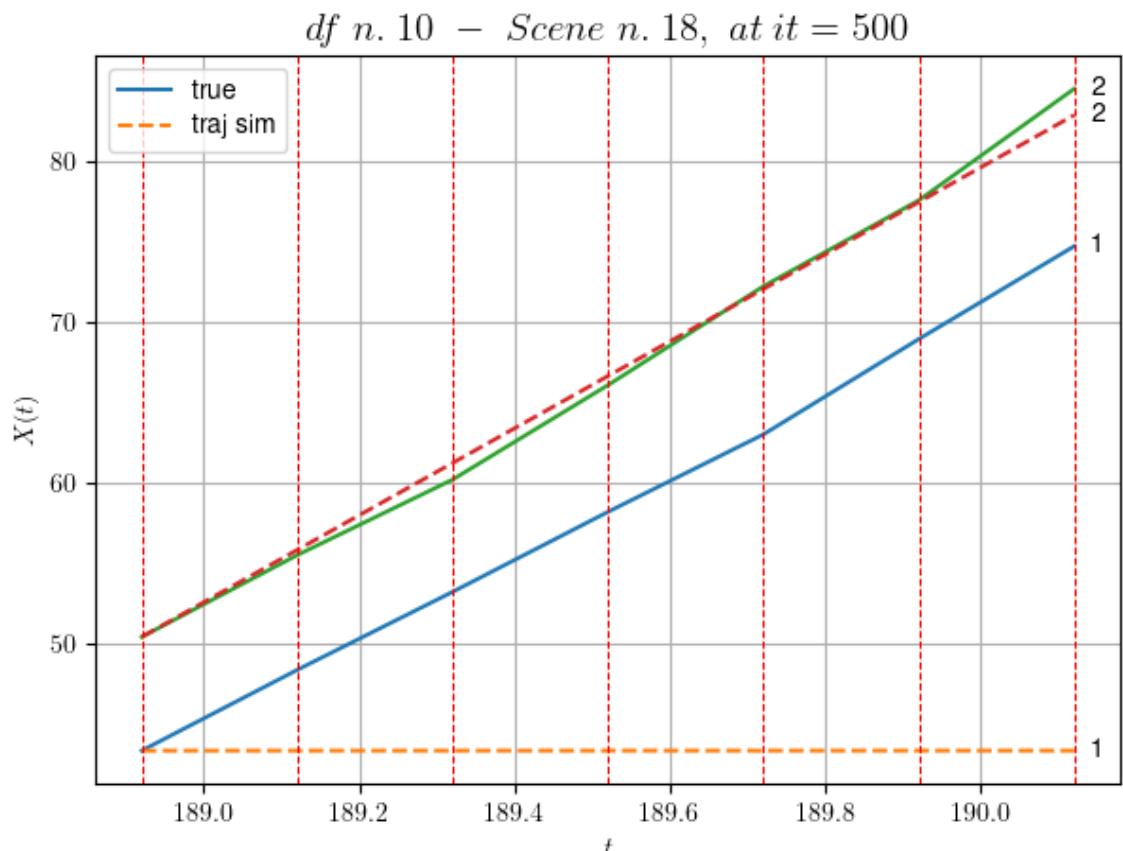
7]

---

- Time interval n.5: [189.92, 190.12]  
 \* y\_true: [28.89284396]  
 \* v\_ann: [0.0008132968214340508, 27.06160992268697]

---

\* err= 169.7209398965193  
 \* Learning rate NN = 0.00031381050939671695  
 \* diff = 0.011503113735557235



For scene 18/74

\* use LR\_NN=0.001 with err=1.9846961406141883 at it=24  
 \* v0\_scn\_mean = 27.17914552575699  
 \* MAE = 169.7155673450401

---



---

df n.10, scene n.19/74

---



---



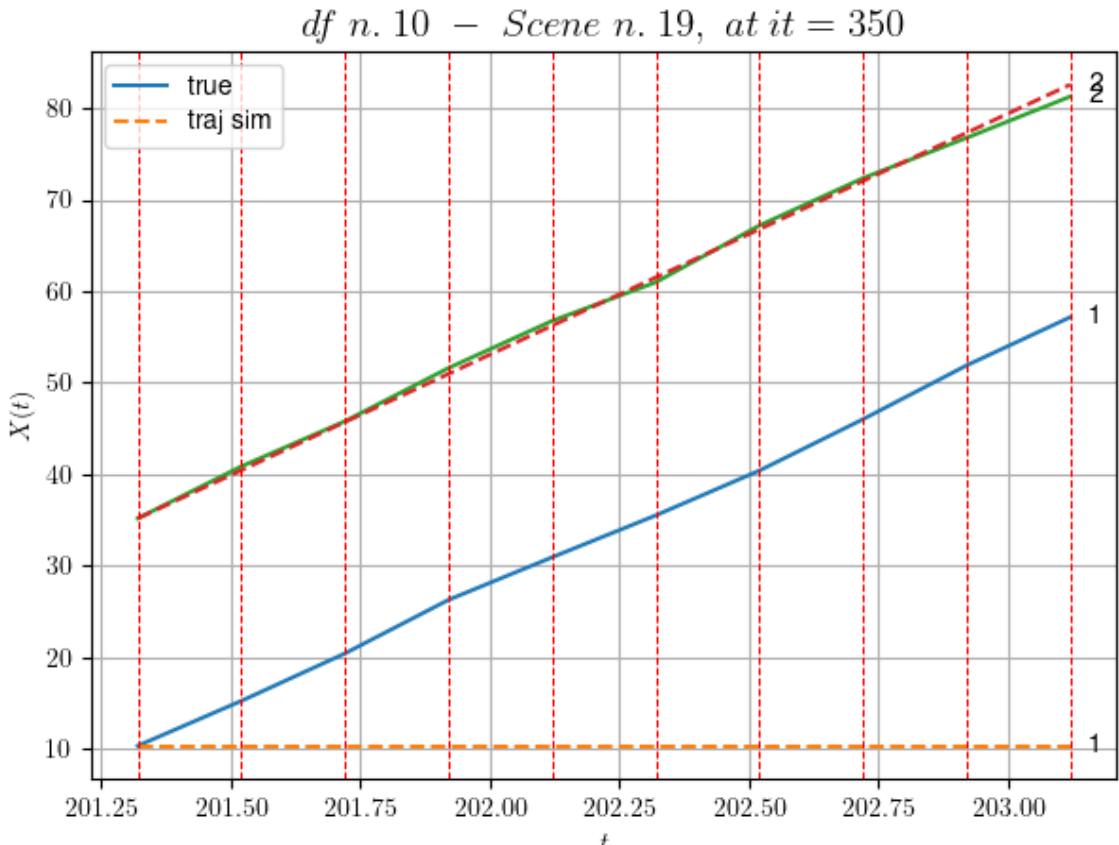
---



---

We have 9 time intervals inside [201.32,203.12]

```
* err= 376.7253957822874
* Learning rate NN = 0.0001412147394148633
* diff = 1.3391473885349114e-07
```



For scene 19/74

```
* use LR_NN=0.0005 with err=8.676401926459697 at it=24
* v0_scn_mean = 26.530378262854097
* MAE = 376.7253957822874
```

---



---

df n.10, scene n.20/74

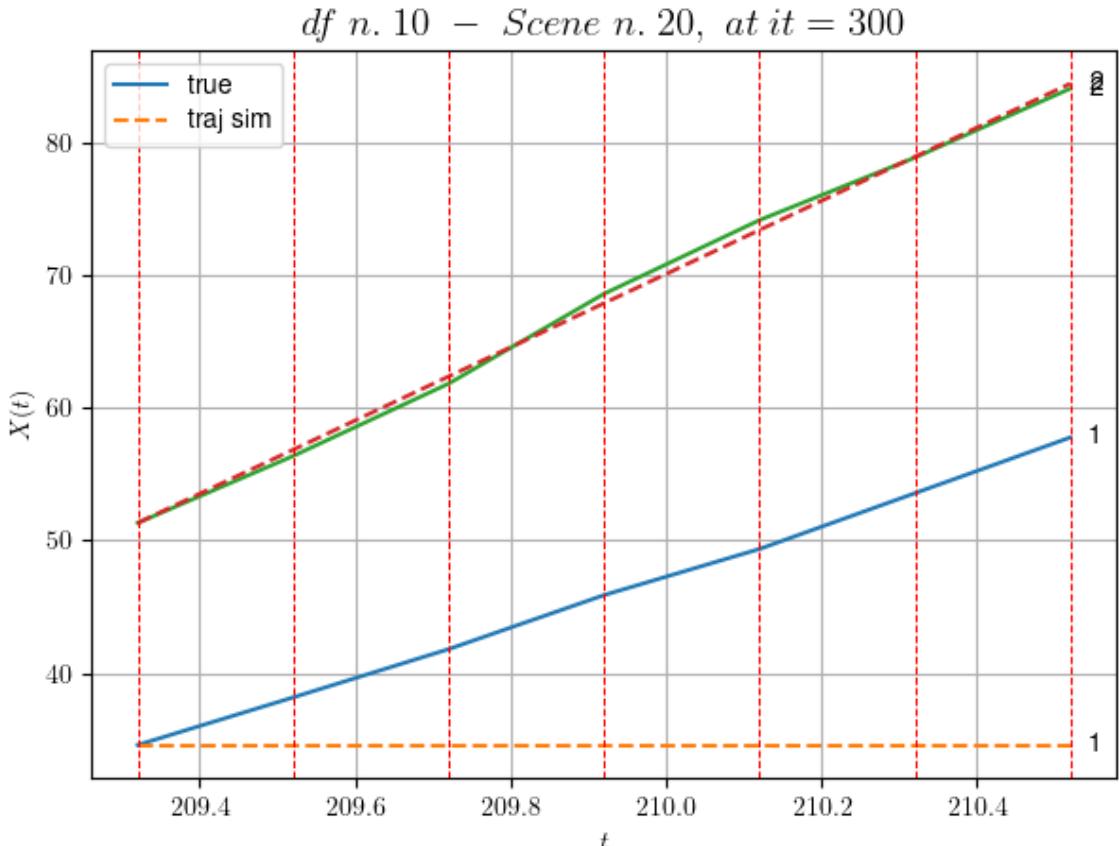
---



---

We have 6 time intervals inside [209.32,210.52]

```
* err= 93.53275535961403
* Learning rate NN = 0.000239148415857926
* diff = 1.6697511284746724e-07
```



For scene 20/74

- \* use LR\_NN=0.0005 with err=1.8234717814486245 at it=24
- \* v0\_scn\_mean = 27.75492519737302
- \* MAE = 93.53200083799084

---



---

df n.10, scene n.21/74

---



---

We have 3 time intervals inside [214.72, 215.32]

- Time interval n.0: [214.72, 214.92]
  - \* y\_true: [24.40146441]
  - \* v\_ann: [28.07371711730957, 28.844117231535062]

---

- Time interval n.1: [214.92, 215.12]
  - \* y\_true: [30.70222368]
  - \* v\_ann: [32.14663314819336, 28.844117231535062]

---

- Time interval n.2: [215.12, 215.32]
  - \* y\_true: [32.35284791]
  - \* v\_ann: [26.867834091186523, 28.844117231535062]

---

**Prepare the out dir**

err = 0.25580958010265425

\* Learning rate NN = 0.0002952449722215533

```
* diff = 5.119279152177025e-05
```

```
In [6]: # Create the directory..
```

```
if flag_save: df n. 10 - Scene n. 21, at it = 500
```

```
ext = ".svg"
```

```
df_seen = [df['N_file'][0] for df in dataset]
df_seen_str = '-' .join(str(x) for x in df_seen)

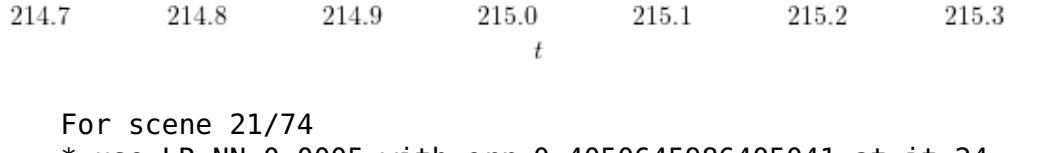
Create directory where to save the image
now = datetime.now()
d = now.strftime("%Y-%m-%d_%H-%M-%S")_df{df_seen_str}_{NUM_ITER}it
```

```
X(t)
path = 'out/' + d
os.mkdir(path)
```

```
In [7]: if flag_save:
```

```
Save the solution in a file
namefile = '/info_nn4.txt'
```

```
with open(path + namefile, 'w') as output:
 info_nn4.to_csv(path + namefile, sep=',', index=False)
```



For scene 21/74

\* use IR NN=0.0005 with err=0.4050645986405041 at it=24















































































































