Generating plots in the documentation (section Examples)

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Objective

Generate the plots for the LaTeX user guide

Setup

loading libraries

Install package in development mode

```
dev_mode() # development mode
```

```
## Dev mode: ON
```

```
install.packages(pkgs=file.path(workDir,"npde_3.0.tar.gz"),repos=NULL)
```

```
## Installing package into 'C:/Users/Romai/OneDrive/Documents/R-dev'
## (as 'lib' is unspecified)
```

```
library(npde)
```

Run examples

- remove warnings (name.ipred empty, etc...) **Romain**

```
## ------------------------------------------
## Distribution of npde :
##       nb of obs: 120
##            mean= 0.0668   (SE= 0.095 )
##        variance= 1.074   (SE= 0.14 )
##        skewness= 0.511
##        kurtosis= 0.2912
## ------------------------------------------
##
## Statistical tests
##   t-test                     : 0.481
##   Fisher variance test       : 0.55
##   SW test of normality       : 0.00273 **
## Global adjusted p-value      : 0.00819 **
## ---
## Signif. codes: '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1
## ------------------------------------------
```

```
## ------------------------------------------
## Distribution of npde :
```

```
##       nb of obs: 300
##            mean= 0.01119   (SE= 0.054 )
##        variance= 0.8739   (SE= 0.071 )
##        skewness= 0.01131
##        kurtosis= -0.3218
## --------------------------------------------
##
## Statistical tests
##   t-test                     : 0.836
##   Fisher variance test       : 0.113
##   SW test of normality       : 0.779
## Global adjusted p-value      : 0.339
## ---
## Signif. codes: '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1
## --------------------------------------------

## --------------------------------------------
## Distribution of npde :
##       nb of obs: 169
##            mean= 0.1433   (SE= 0.07 )
##        variance= 0.8186   (SE= 0.089 )
##        skewness= -0.03812
##        kurtosis= -0.3733
## --------------------------------------------
##
## Statistical tests
##   t-test                     : 0.041 *
##   Fisher variance test       : 0.0822 .
##   SW test of normality       : 0.687
## Global adjusted p-value      : 0.123
## ---
## Signif. codes: '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1
## --------------------------------------------

## --------------------------------------------
## Distribution of npde :
##       nb of obs: 300
##            mean= 0.03101   (SE= 0.057 )
##        variance= 0.9715   (SE= 0.079 )
##        skewness= -0.006498
##        kurtosis= 0.8122
## --------------------------------------------
##
## Statistical tests
##   t-test                     : 0.586
##   Fisher variance test       : 0.746
##   SW test of normality       : 0.00121 **
## Global adjusted p-value      : 0.00364 **
## ---
## Signif. codes: '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1
## --------------------------------------------

## --------------------------------------------
## Distribution of npde :
##       nb of obs: 300
```

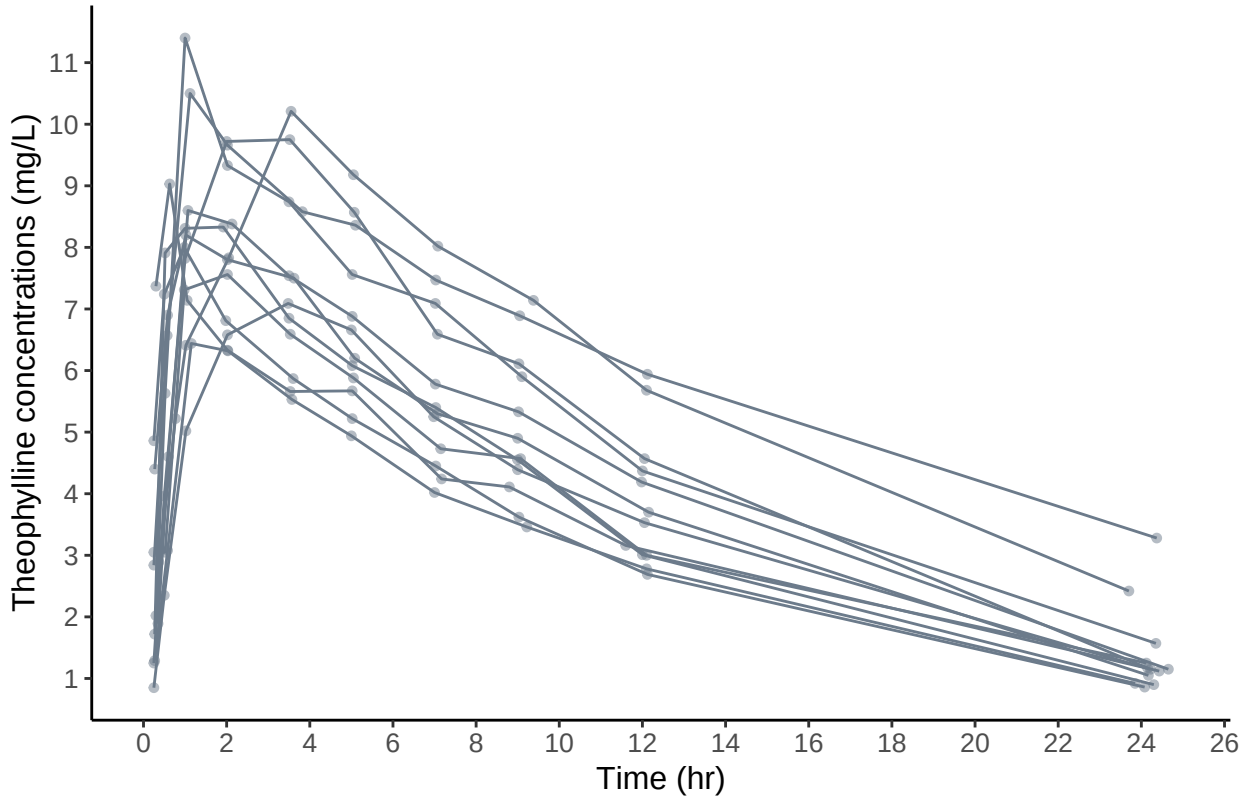
```
##            mean= 0.03058   (SE= 0.062 )
##        variance= 1.164   (SE= 0.095 )
##        skewness= 0.04433
##        kurtosis= -0.05092
## ------------------------------------------
##
## Statistical tests
##   t-test                     : 0.624
##   Fisher variance test       : 0.0539 .
##   SW test of normality       : 0.973
## Global adjusted p-value      : 0.162
## ---
## Signif. codes: '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1
## ------------------------------------------

## ------------------------------------------
## Distribution of npde :
##       nb of obs: 247
##            mean= 0.03419   (SE= 0.06 )
##        variance= 0.8753   (SE= 0.079 )
##        skewness= -0.1149
##        kurtosis= -0.0497
## ------------------------------------------
##
## Statistical tests
##   t-test                     : 0.566
##   Fisher variance test       : 0.157
##   SW test of normality       : 0.371
## Global adjusted p-value      : 0.471
## ---
## Signif. codes: '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1
## ------------------------------------------

## ------------------------------------------
## Distribution of npde :
##       nb of obs: 247
##            mean= 0.02928   (SE= 0.059 )
##        variance= 0.8549   (SE= 0.077 )
##        skewness= -0.07211
##        kurtosis= -0.4172
## ------------------------------------------
##
## Statistical tests
##   t-test                     : 0.619
##   Fisher variance test       : 0.096 .
##   SW test of normality       : 0.368
## Global adjusted p-value      : 0.288
## ---
## Signif. codes: '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1
## ------------------------------------------
```

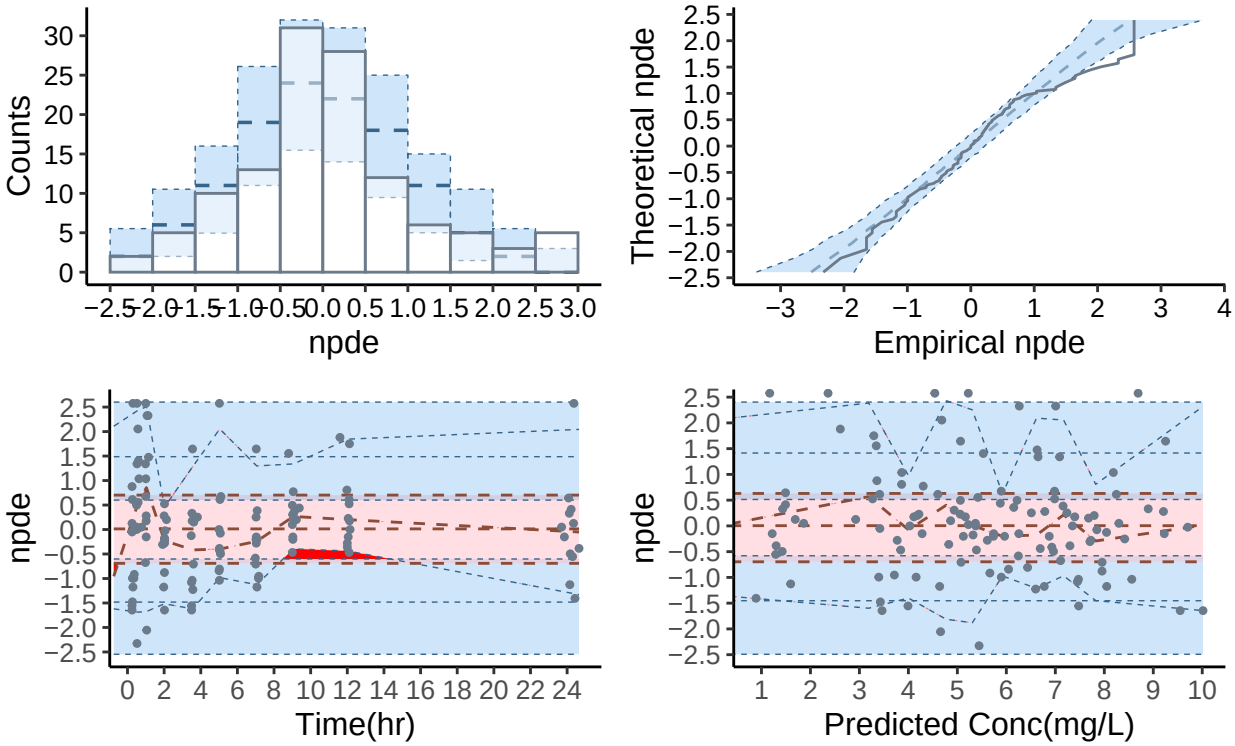
Theophylline example

- **solved** data **Romain**
  - manquent les titres des axes, les axes

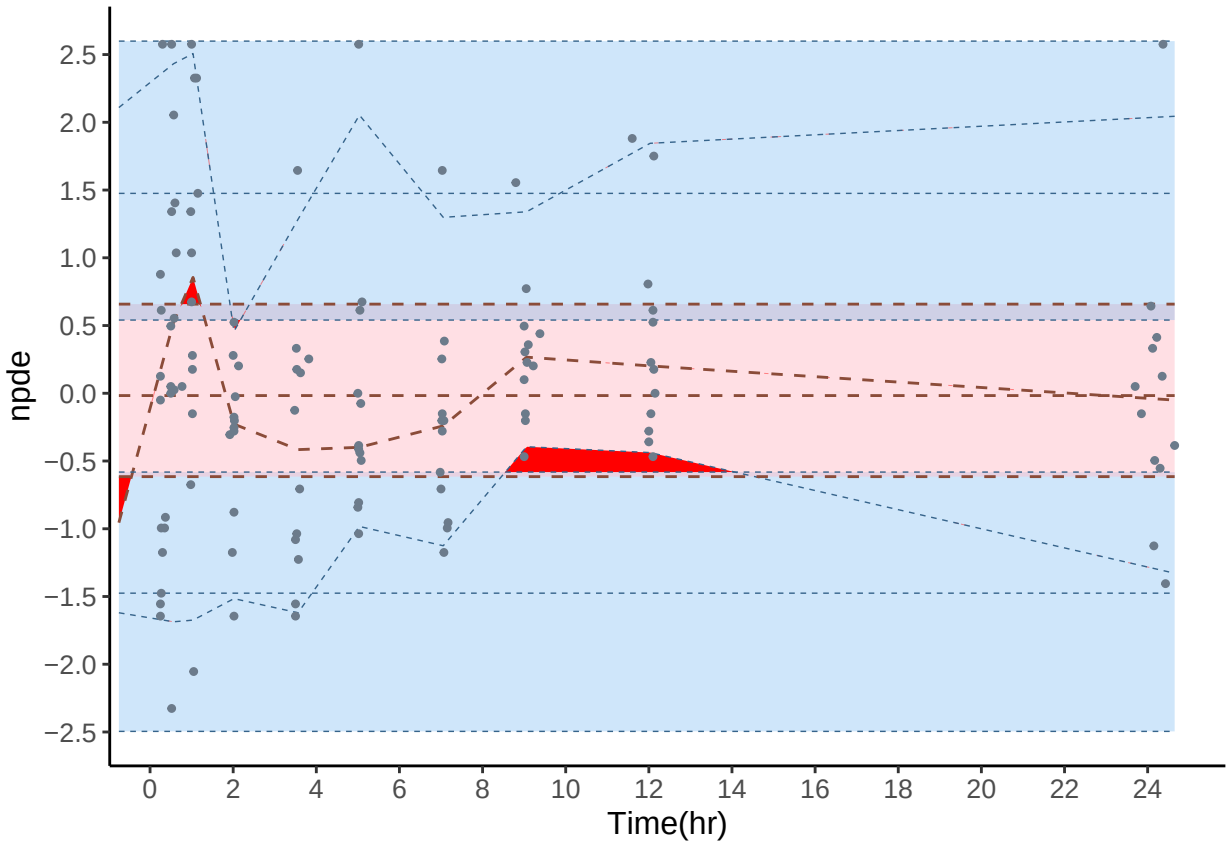
- VPC, scatterplot **Eco fait**
  - modifié pour que le tracé des percentiles observés soit fait avec les linetype et size de lobs (pas des bandes), par contre la couleur matche celle de la bande de prédiction correspondante

```
## [[1]]

## Warning: Removed 12 rows containing missing values (geom_point).

## Warning: Removed 12 row(s) containing missing values (geom_path).
```



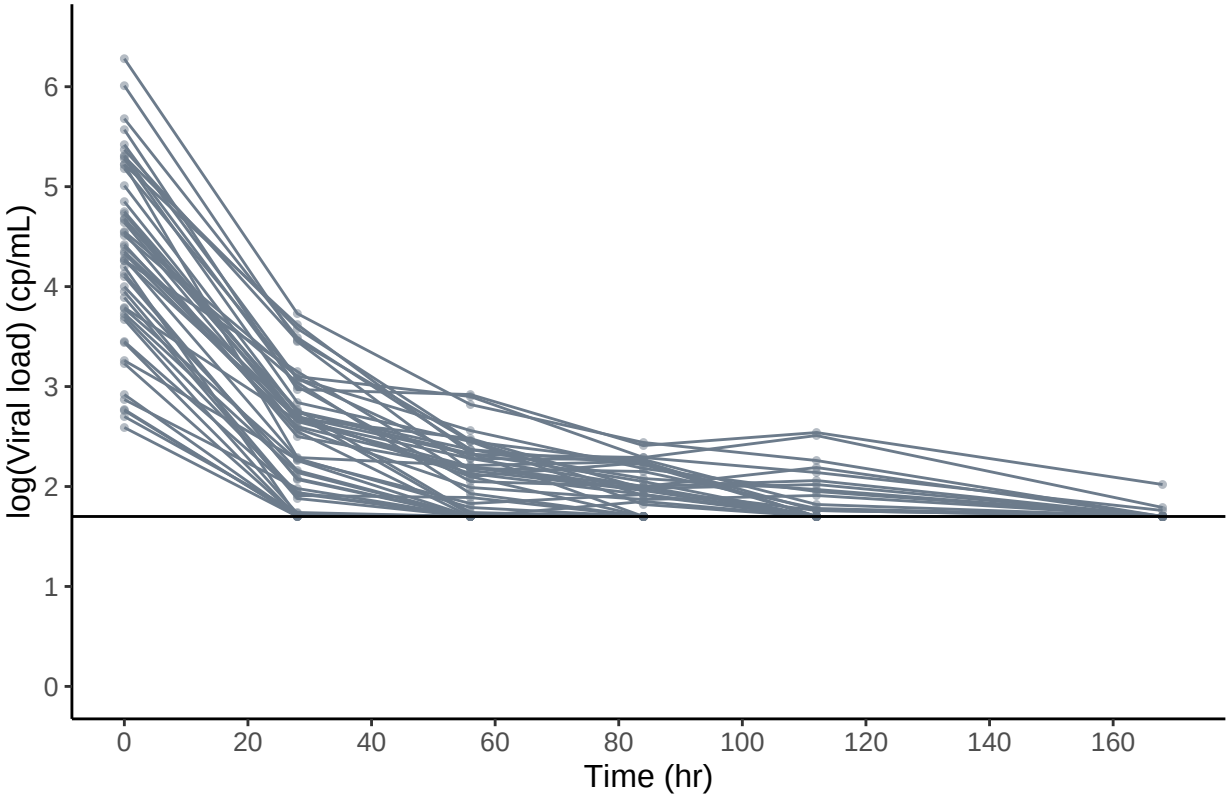

Counts
npde
Theoretical npde
Empirical npde
npde
Time(hr)
npde
Predicted Conc(mg/L)

```
## [[1]]
```

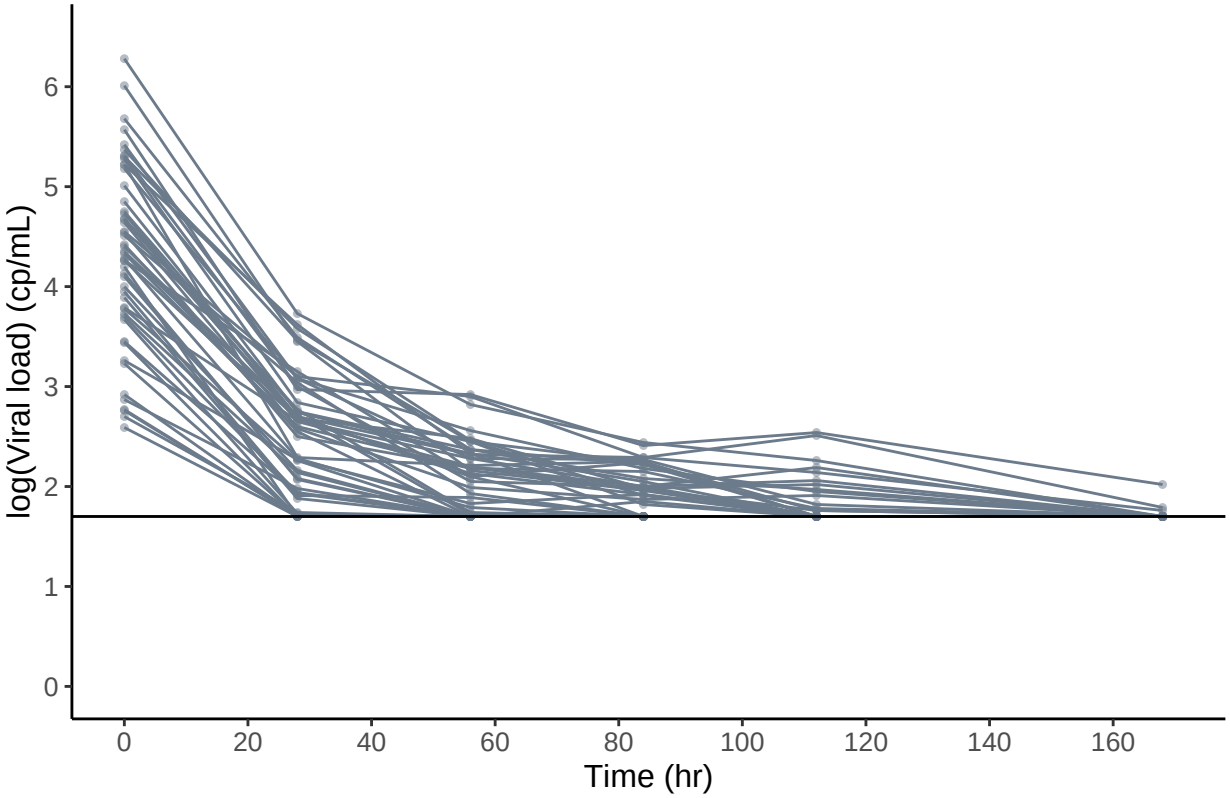


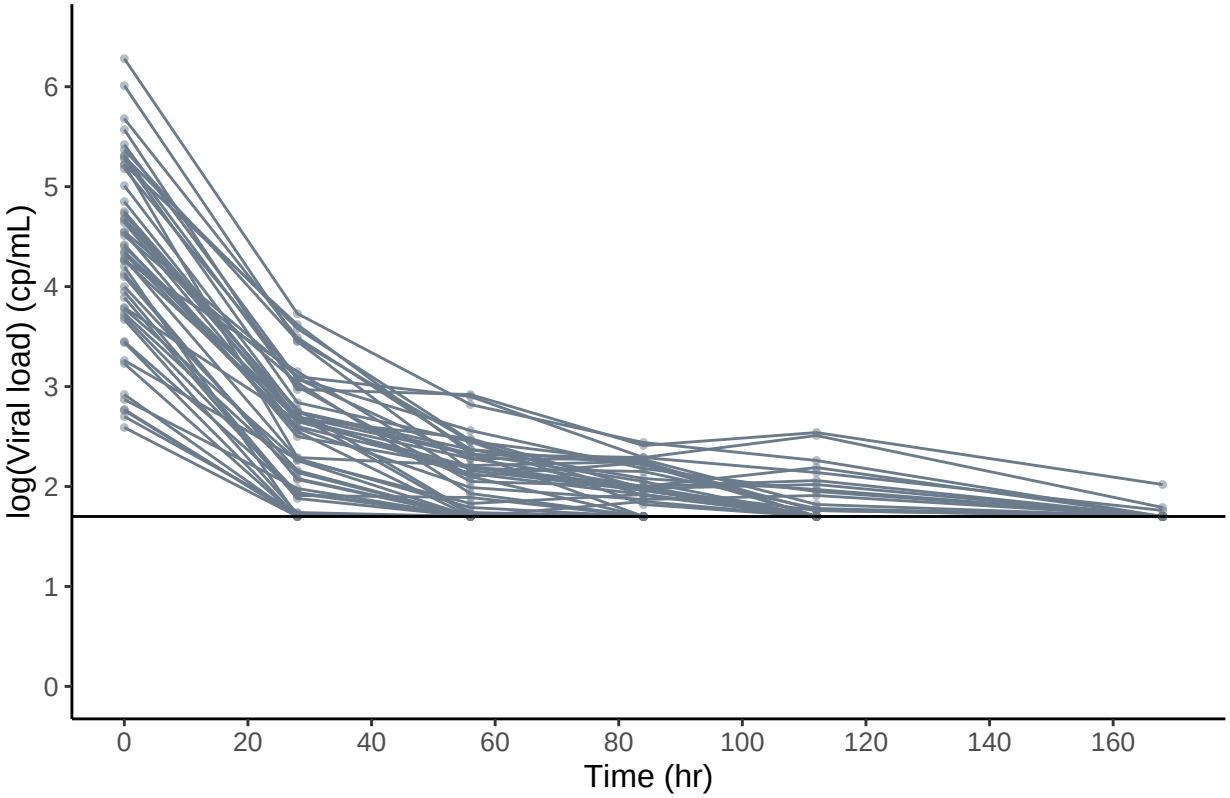
Viral load example

- data
  - mêmes problèmes que plus haut
  - **solved** line.loq doesn't work **Romain**
  - besoin de faire un waffle plot avec les 4 objets data, **Romain TODO** possible ? (sinon sauver 4 graphes)
  - **Note** Ce n'est plus possible maintenant, les fonctions plot renvoient des object p=NULL. Pas moyen après ça de les mettre dans une liste pour un grid.arrange.

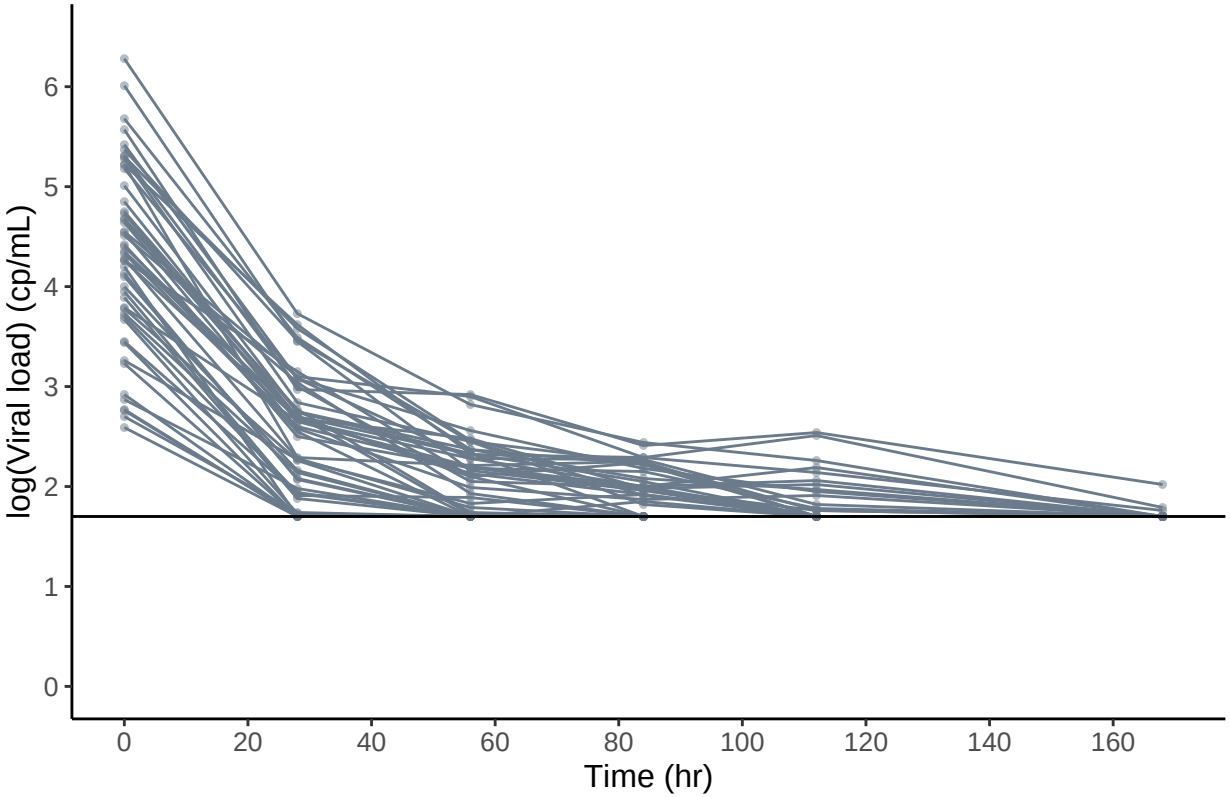

log(Viral load) (cp/mL)
0
1
2
3
4
5
6
0
20
40
60
80
100
120
140
160
Time (hr)

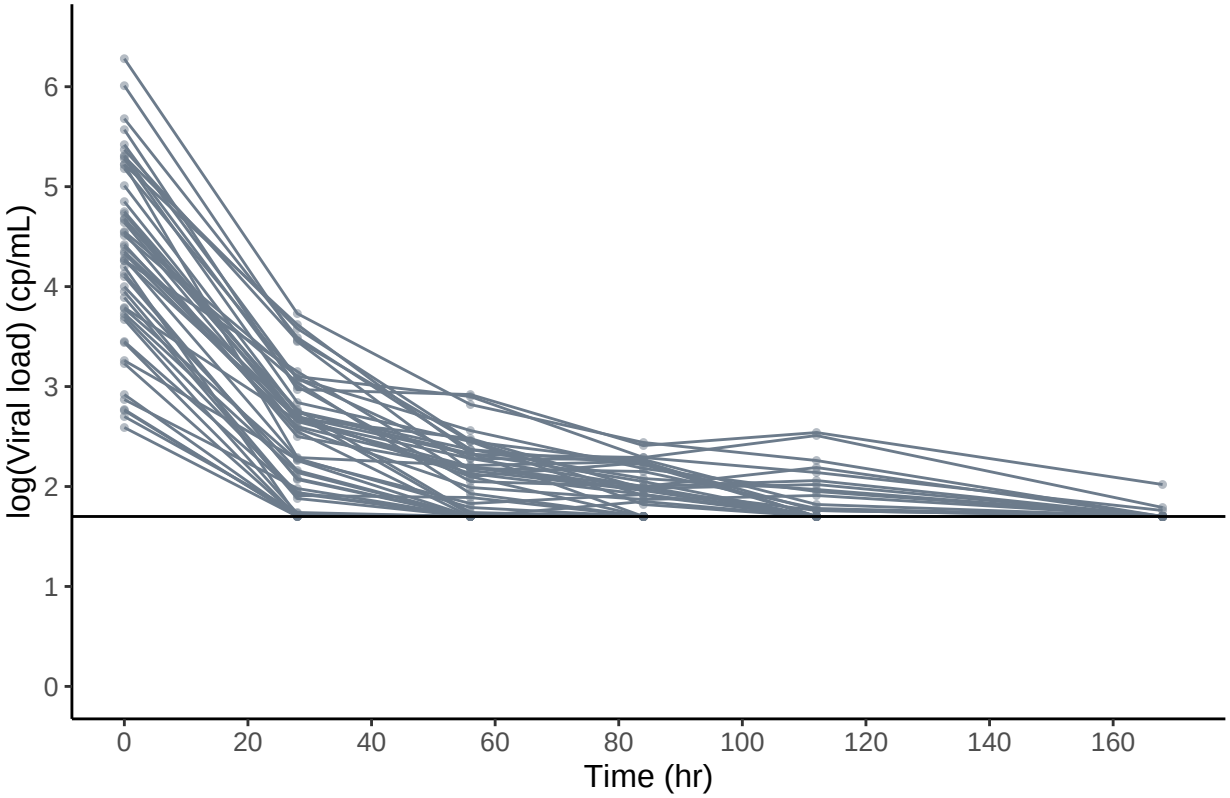
```
## [[1]]
```


log(Viral load) (cp/mL)
0
1
2
3
4
5
6
0
20
40
60
80
100
120
140
160
Time (hr)

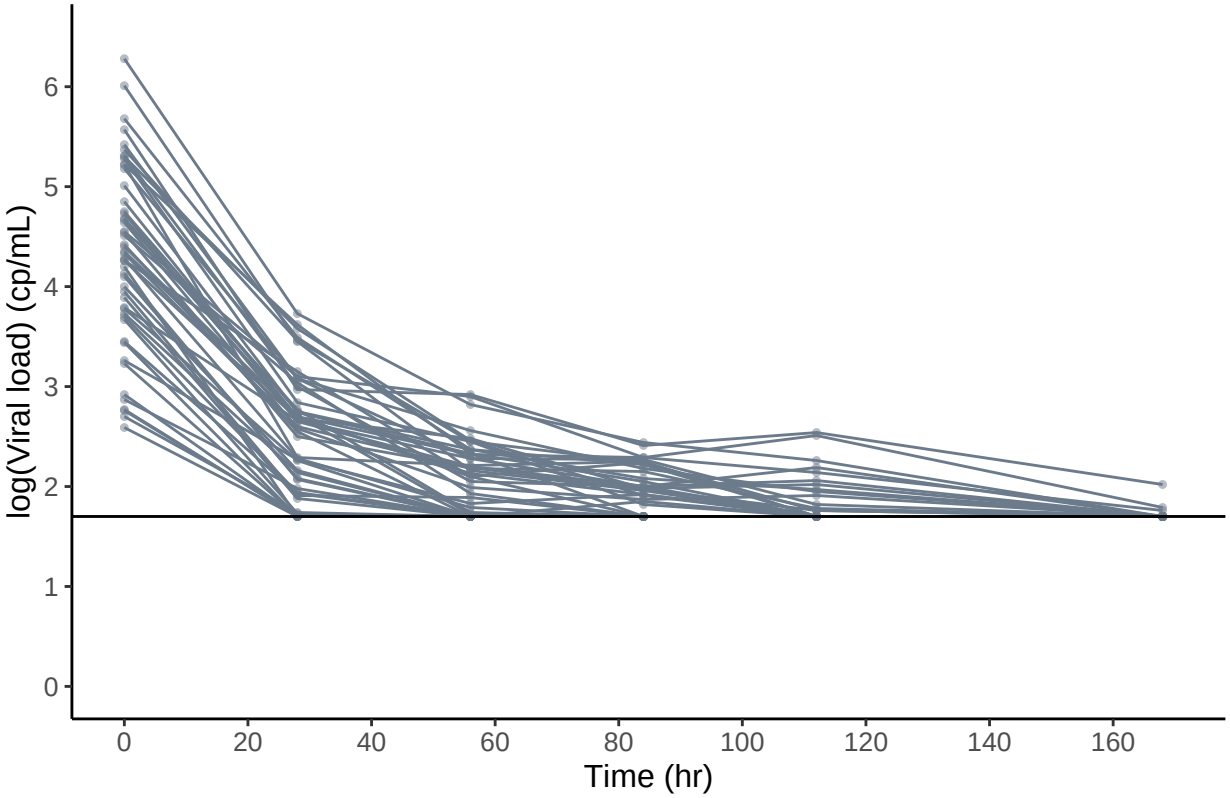

log(Viral load) (cp/mL)
0
1
2
3
4
5
6
0
20
40
60
80
100
120
140
160
Time (hr)

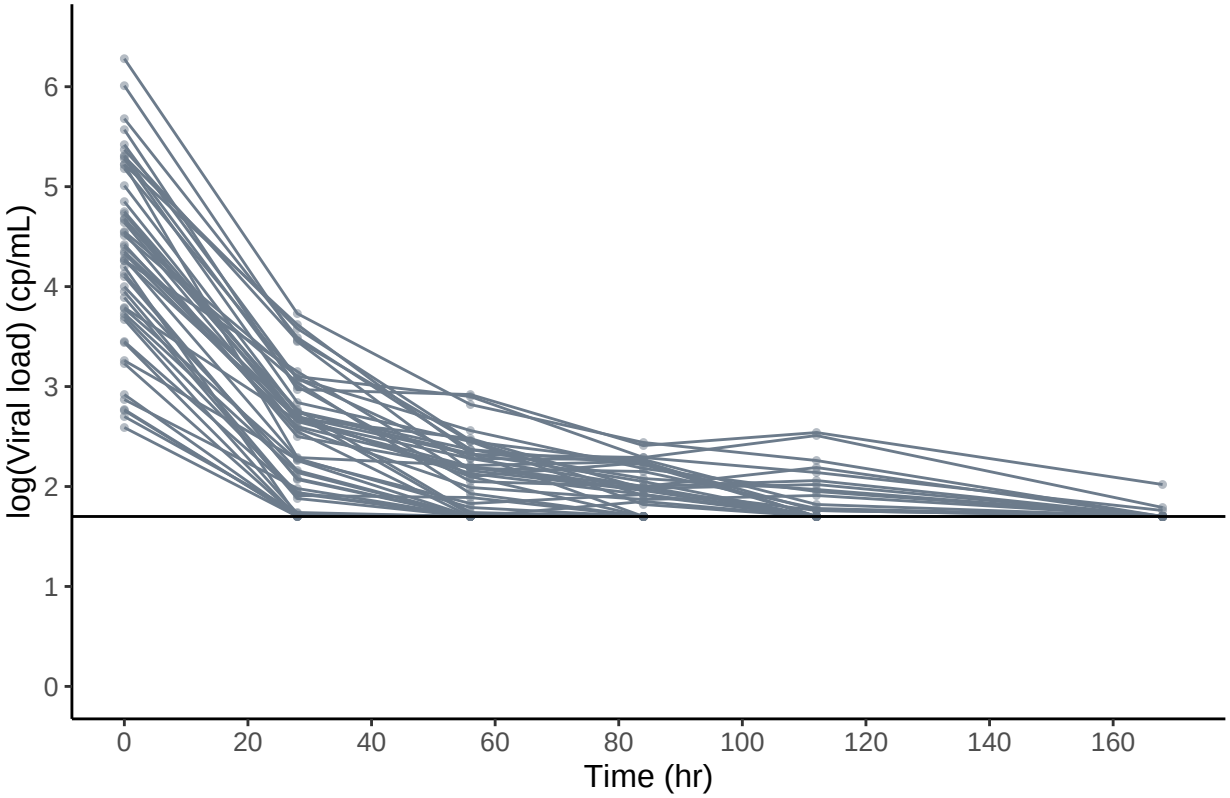
```
## [[1]]
```


log(Viral load) (cp/mL)
0
1
2
3
4
5
6
0
20
40
60
80
100
120
140
160
Time (hr)

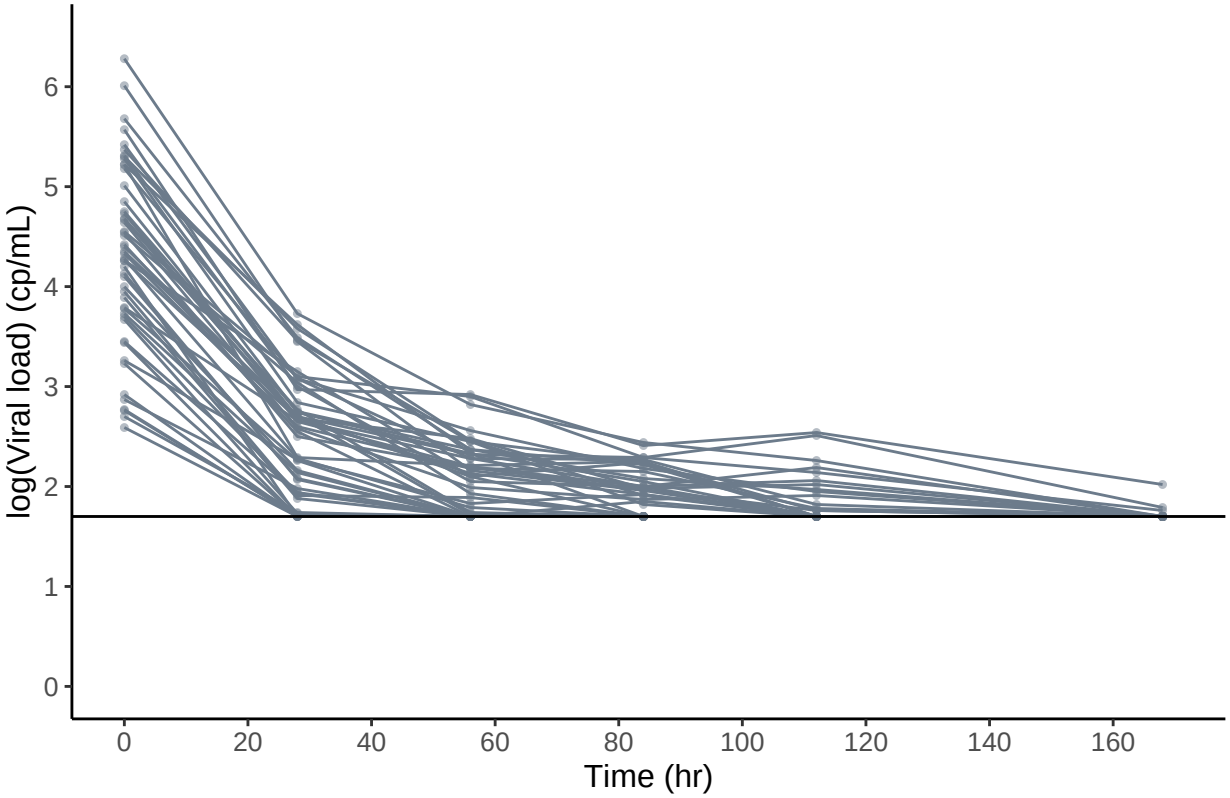

log(Viral load) (cp/mL)
0
1
2
3
4
5
6
0
20
40
60
80
100
120
140
160
Time (hr)

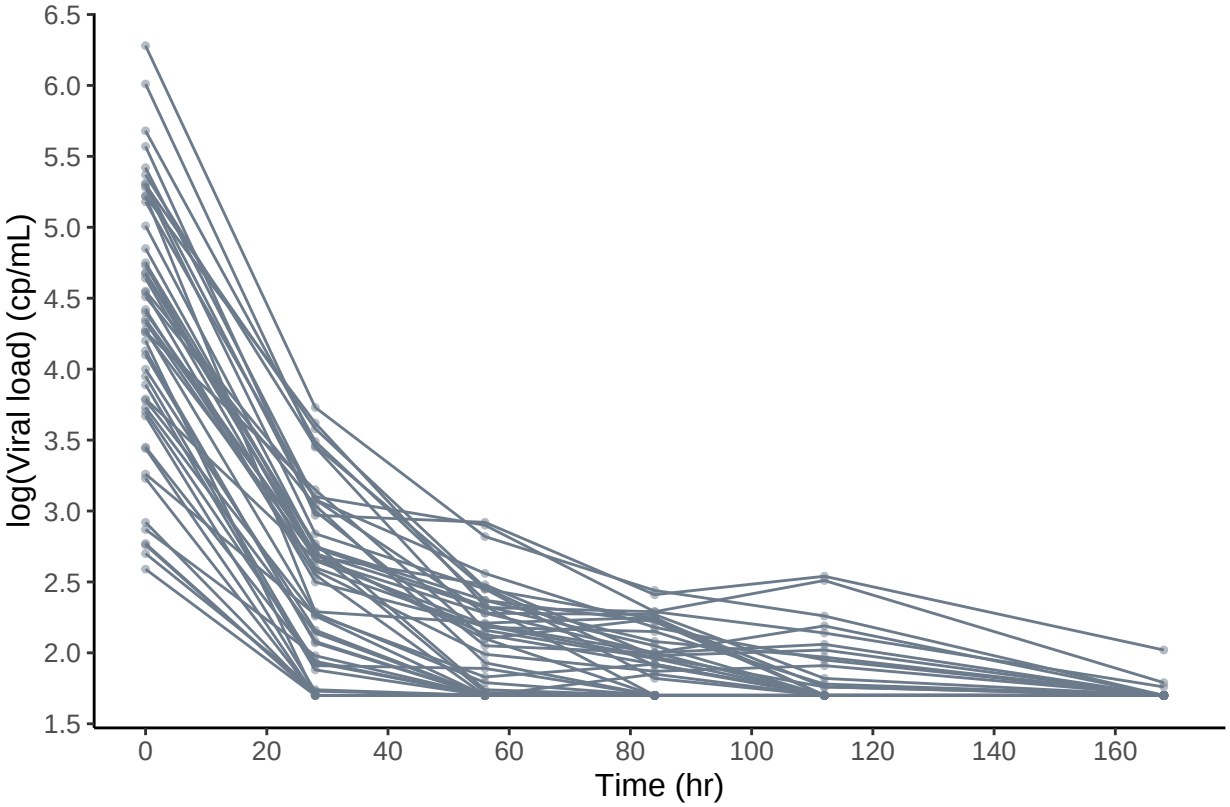
```
## [[1]]
```

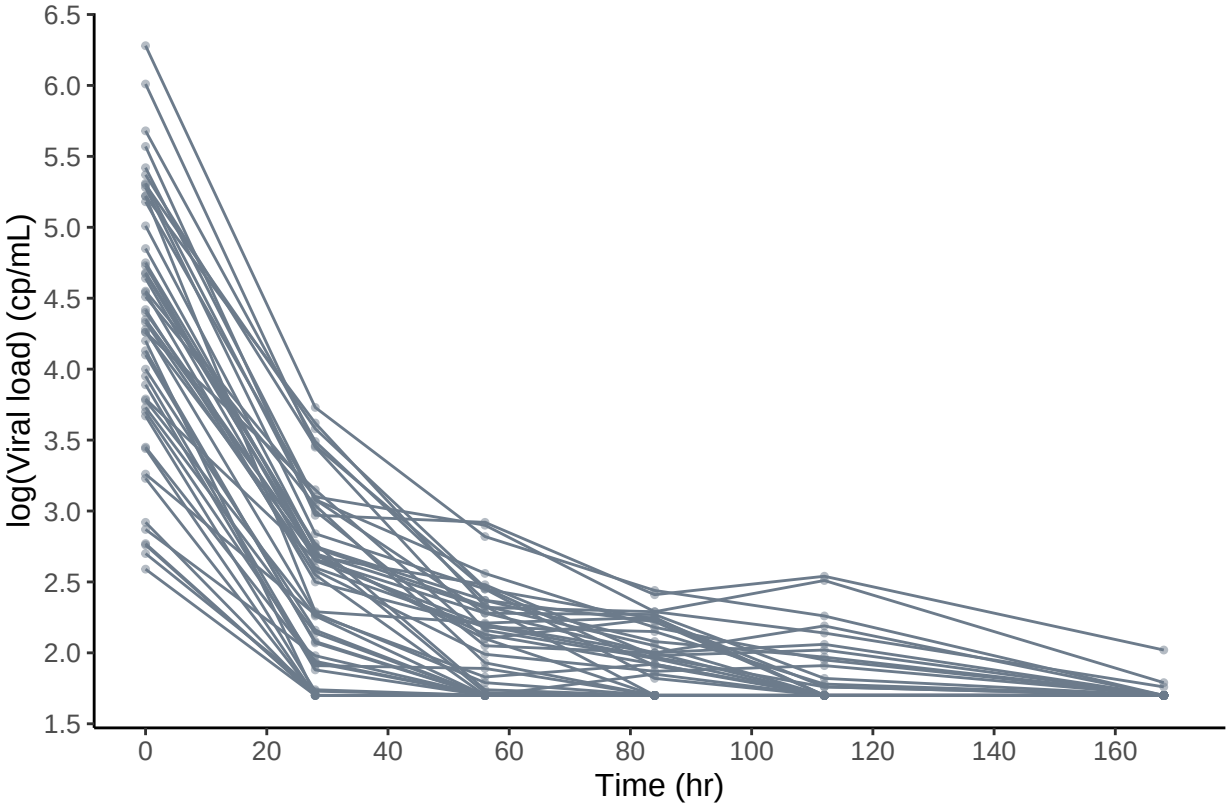

log(Viral load) (cp/mL)
6
5
4
3
2
1
0
0
20
40
60
80
100
120
140
160
Time (hr)

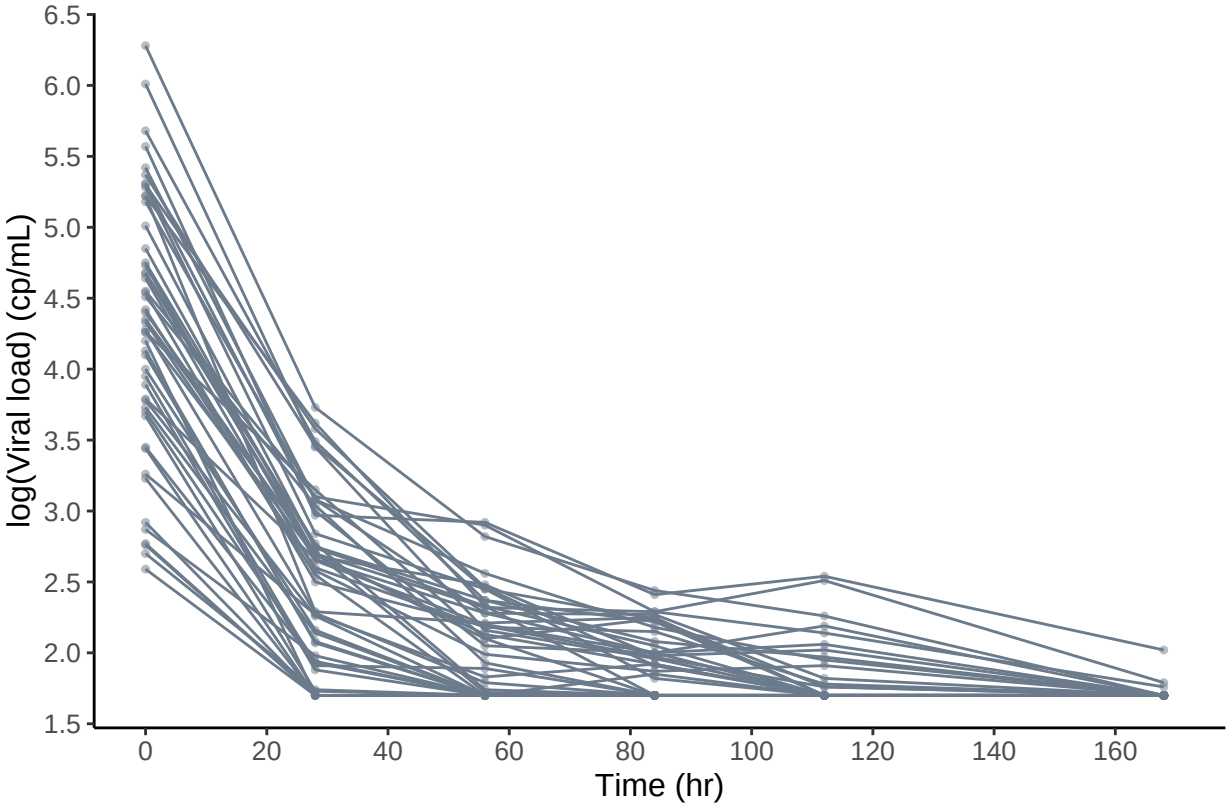

log(Viral load) (cp/mL)
0
1
2
3
4
5
6
0
20
40
60
80
100
120
140
160
Time (hr)

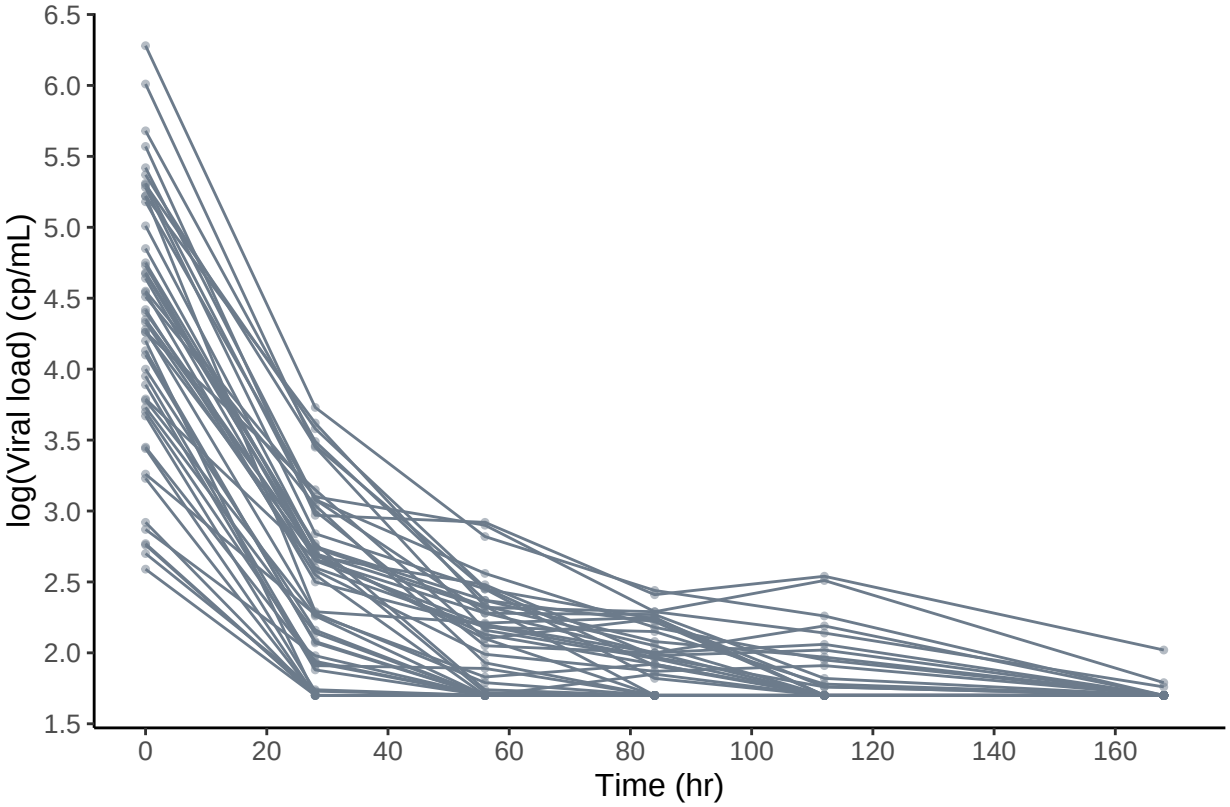
```
## [[1]]
```

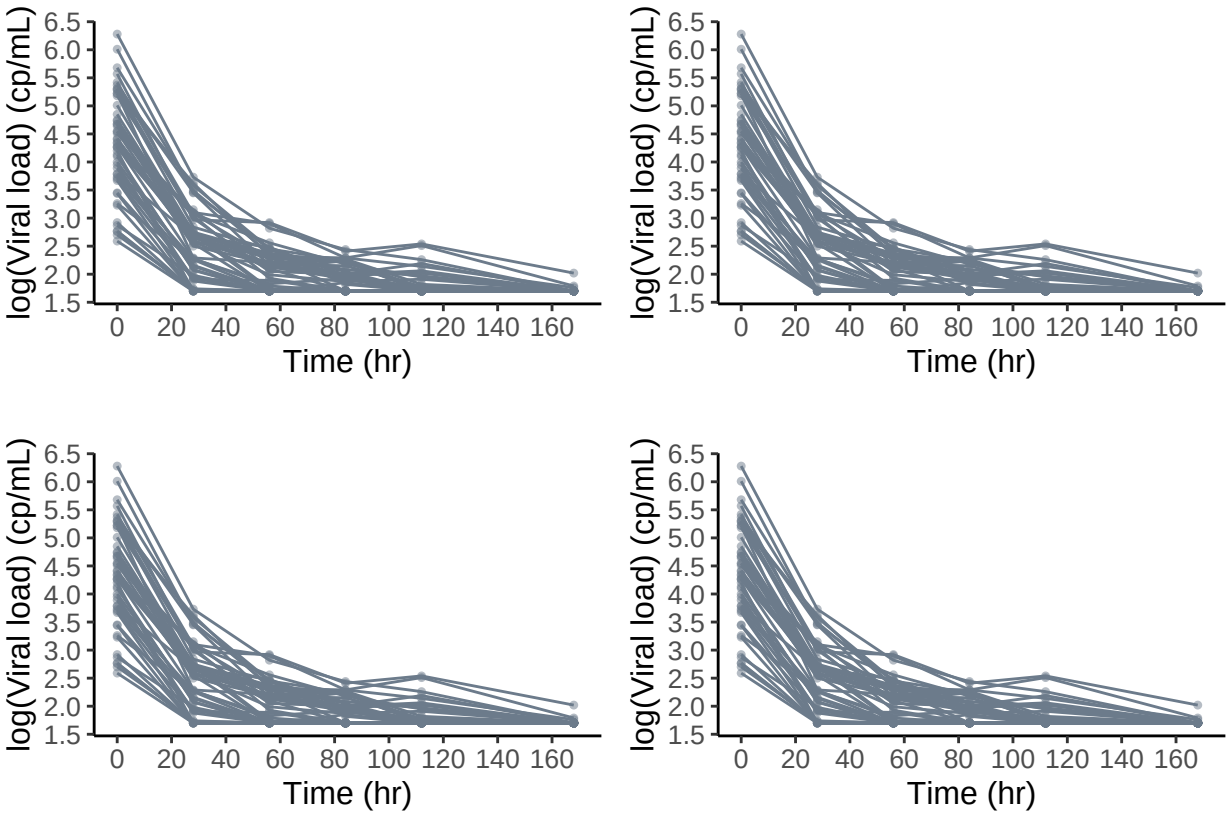

log(Viral load) (cp/mL)
0
1
2
3
4
5
6
0
20
40
60
80
100
120
140
160
Time (hr)


log(Viral load) (cp/mL)
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
0
20
40
60
80
100
120
140
160
Time (hr)

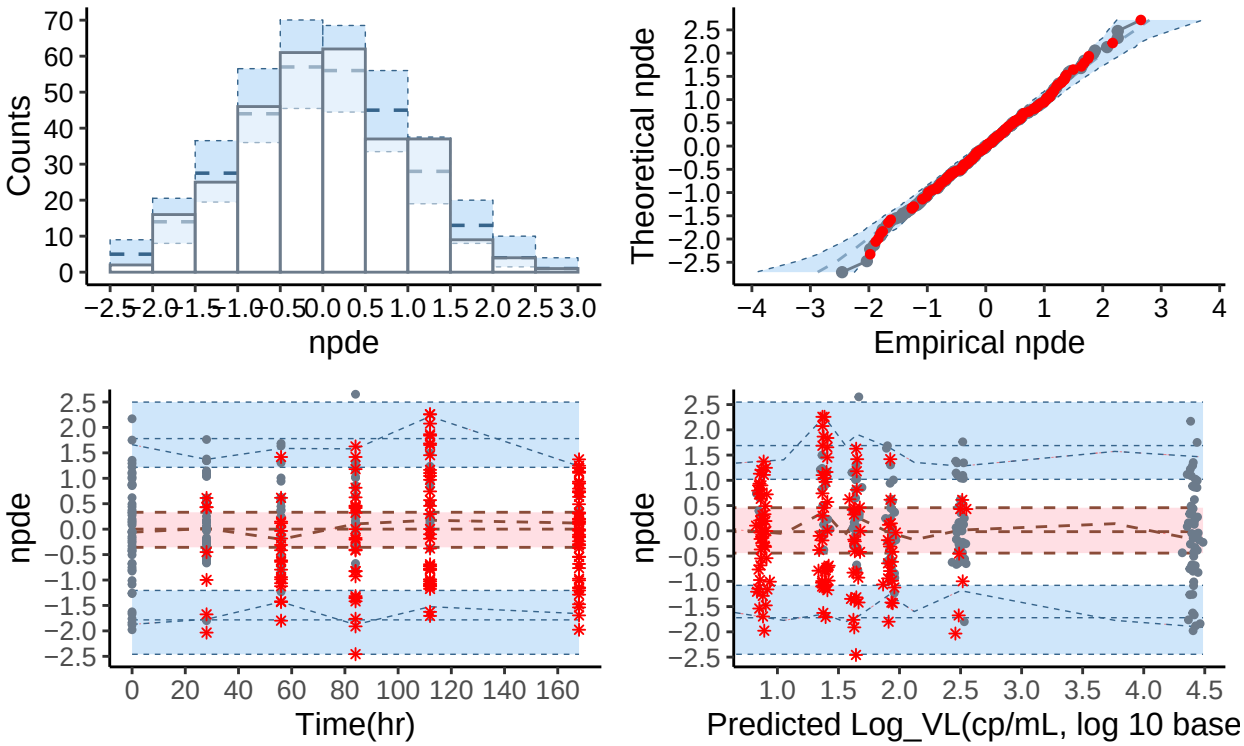

log(Viral load) (cp/mL)
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
0
20
40
60
80
100
120
140
160
Time (hr)

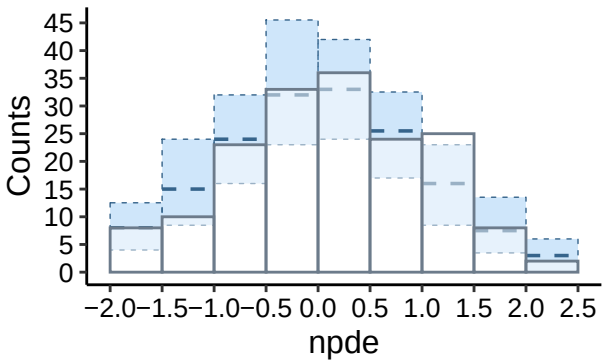

log(Viral load) (cp/mL)
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
0
20
40
60
80
100
120
140
160
Time (hr)

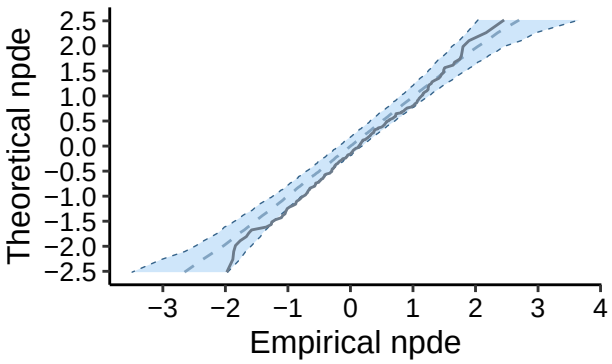

log(Viral load) (cp/mL)
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
0
20
40
60
80
100
120
140
160
Time (hr)

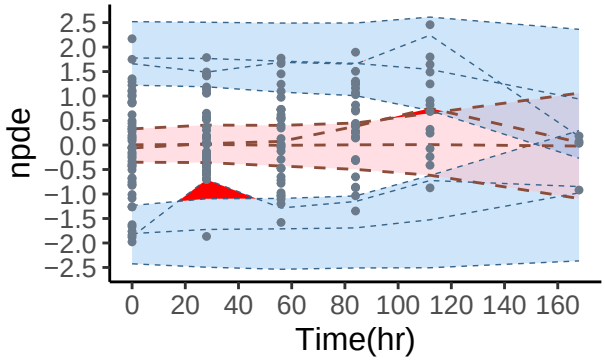


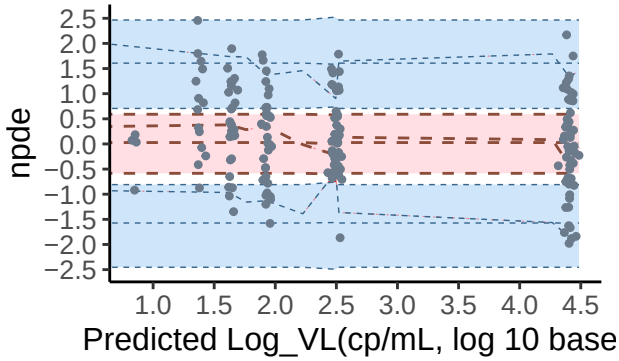
- scatterplots and VPC
  - pb with VPC of x50 **Eco fait**
- **solved** possibilité d'utiliser un grid.arrange pour les 2 derniers graphes ? **Romain**

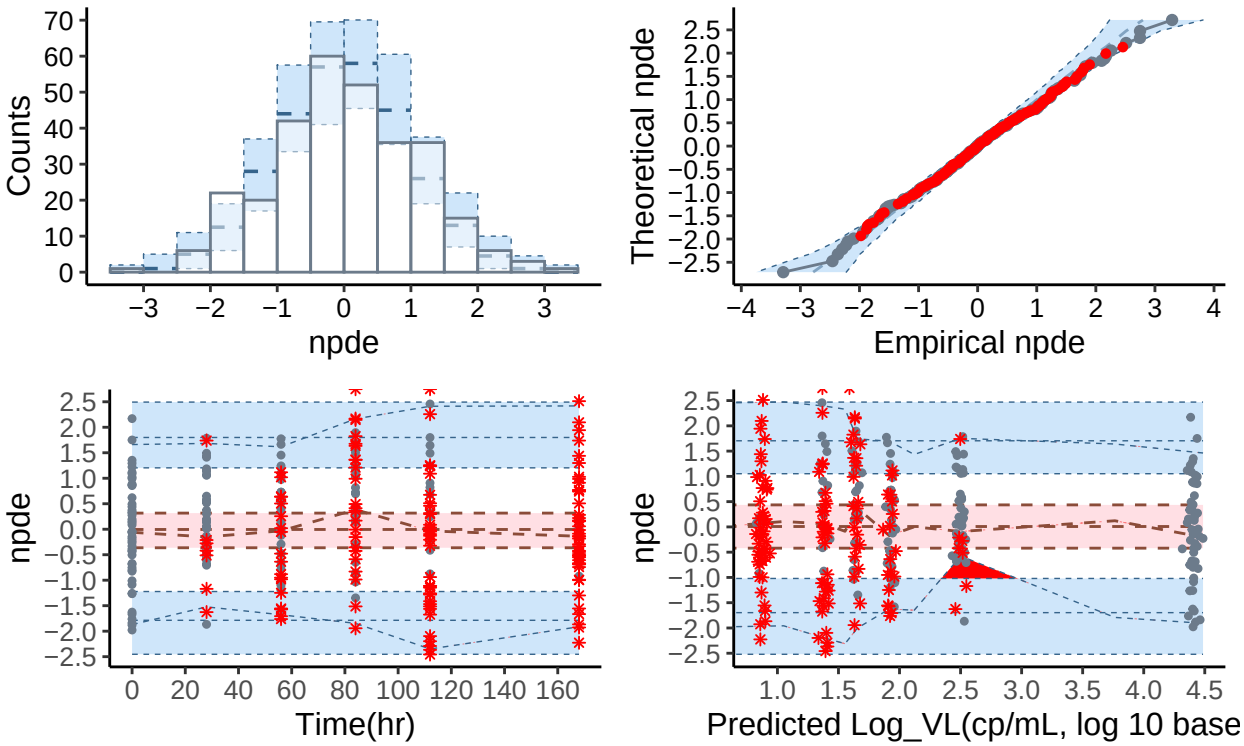

Counts
npde
Theoretical npde
Empirical npde
npde
Time(hr)
npde
Predicted Log_VL(cp/mL, log 10 base

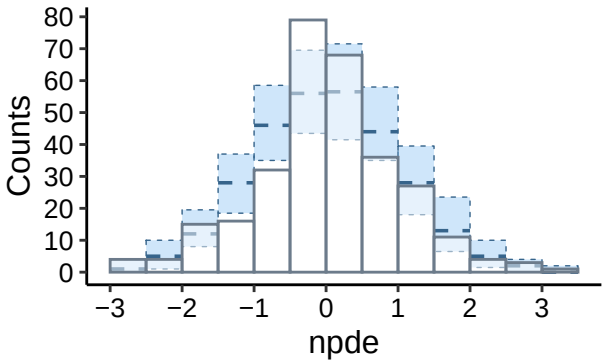

Counts
45
40
35
30
25
20
15
10
5
0
−2.0 −1.5 −1.0 −0.5 0.0 0.5 1.0 1.5 2.0 2.5
npde

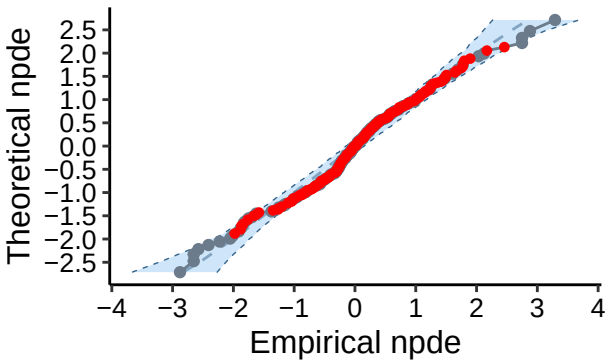

Theoretical npde
2.5
2.0
1.5
1.0
0.5
0.0
−0.5
−1.0
−1.5
−2.0
−2.5
−3 −2 −1 0 1 2 3 4
Empirical npde

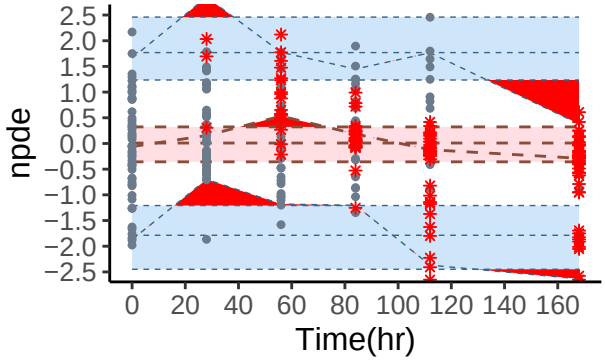

npde
2.5
2.0
1.5
1.0
0.5
0.0
−0.5
−1.0
−1.5
−2.0
−2.5
0 20 40 60 80 100 120 140 160
Time(hr)

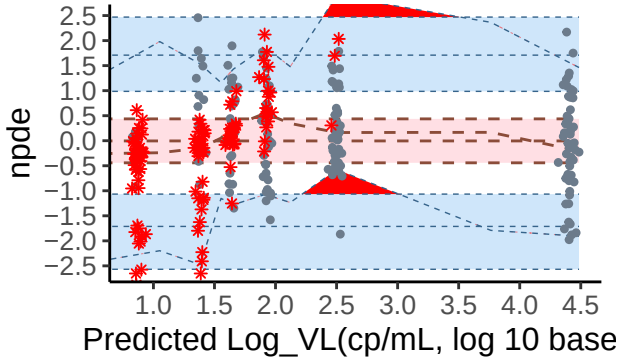

npde
2.5
2.0
1.5
1.0
0.5
0.0
−0.5
−1.0
−1.5
−2.0
−2.5
1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5
Predicted Log_VL(cp/mL, log 10 base


Counts
npde
Theoretical npde
Empirical npde
npde
Time(hr)
npde
Predicted Log_VL(cp/mL, log 10 base

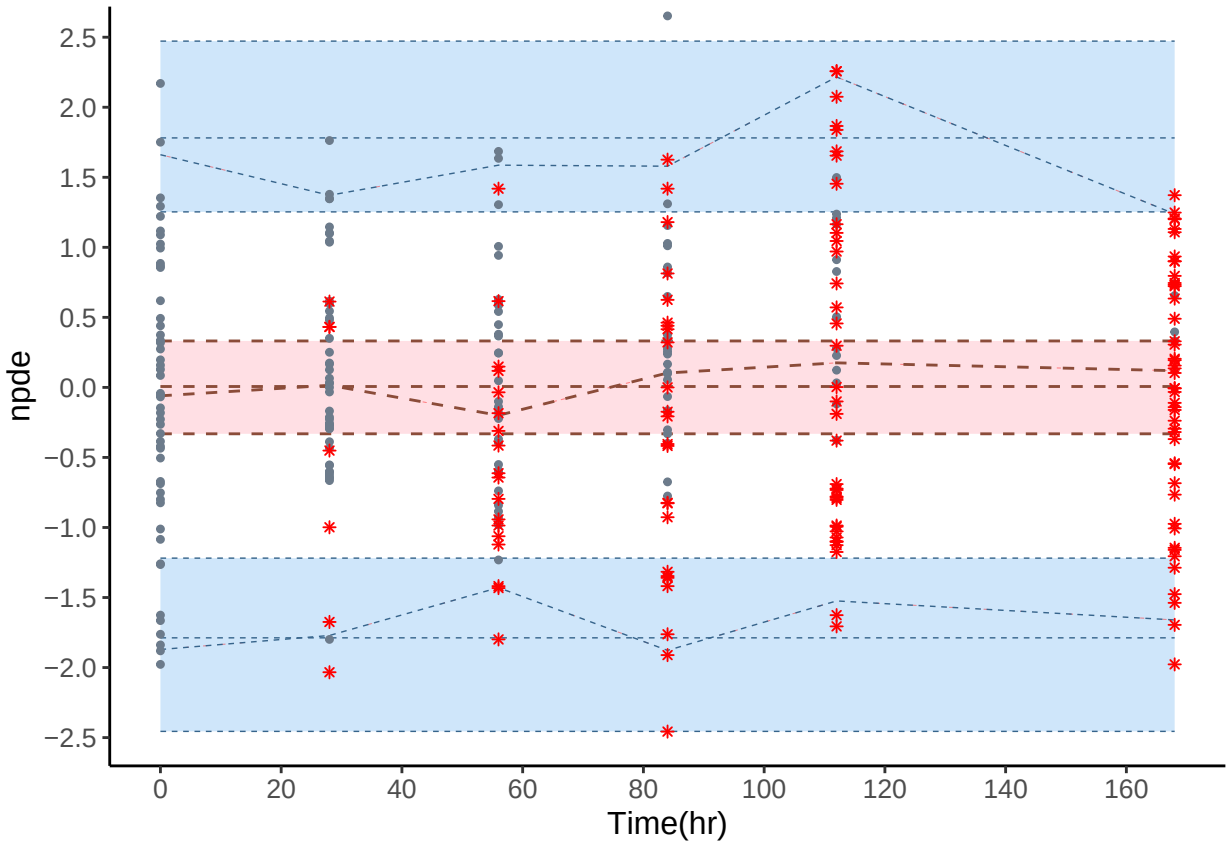

Counts
npde


Theoretical npde
Empirical npde

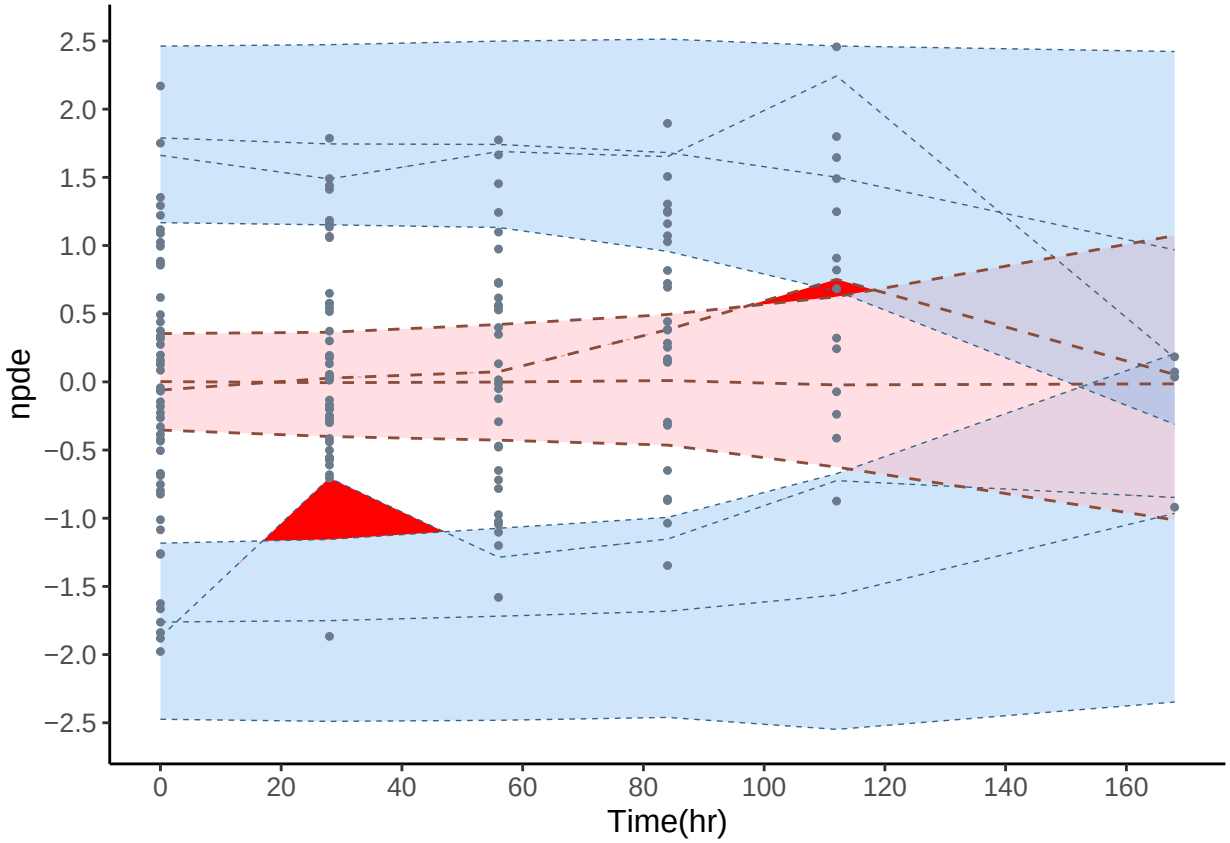

npde
Time(hr)

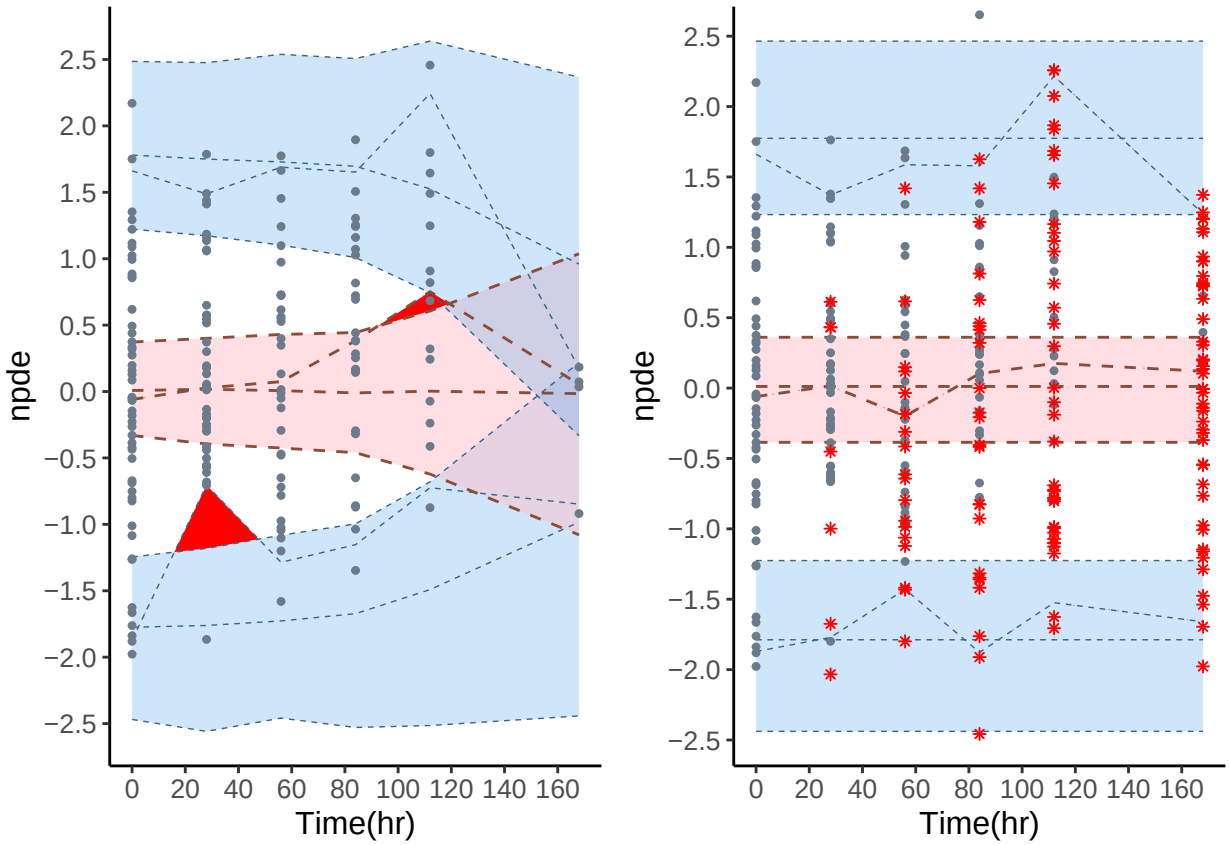

npde
Predicted Log_VL(cp/mL, log 10 base

```
## [[1]]
```

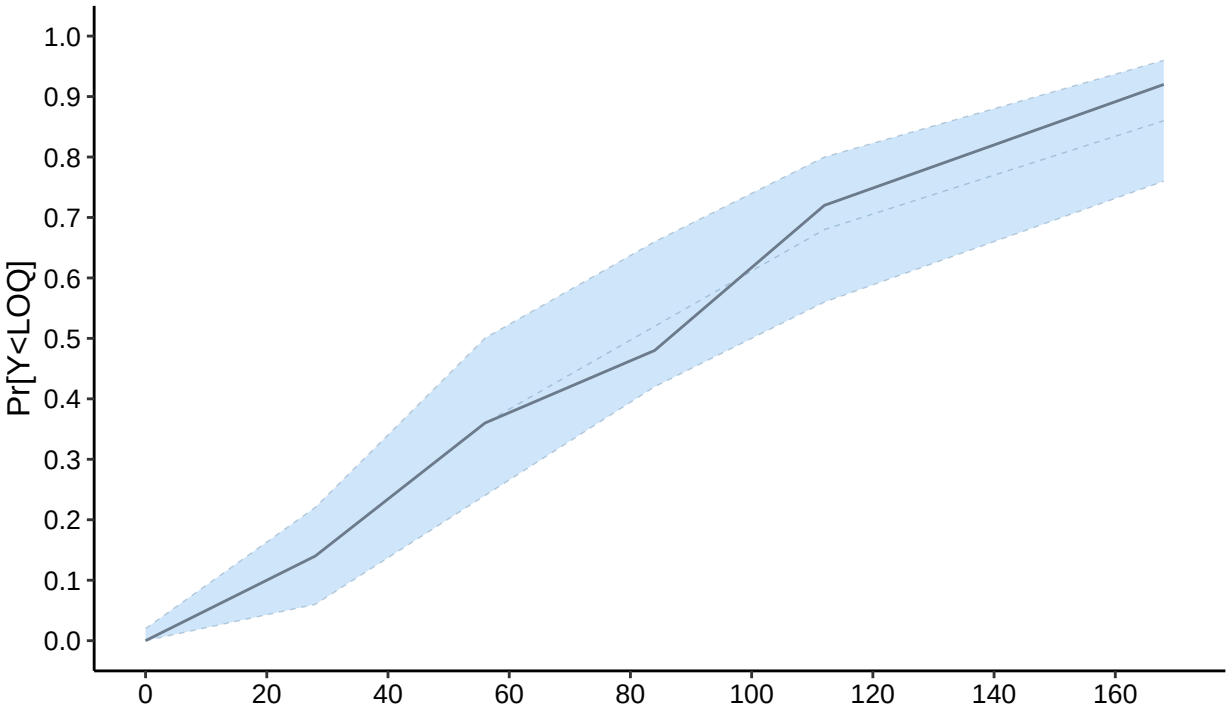

2.5
2.0
1.5
1.0
0.5
0.0
−0.5
−1.0
−1.5
−2.0
−2.5
npde
0
20
40
60
80
100
120
140
160
Time(hr)

```
## [[1]]
```


npde
2.5
2.0
1.5
1.0
0.5
0.0
−0.5
−1.0
−1.5
−2.0
−2.5
0
20
40
60
80
100
120
140
160
Time(hr)

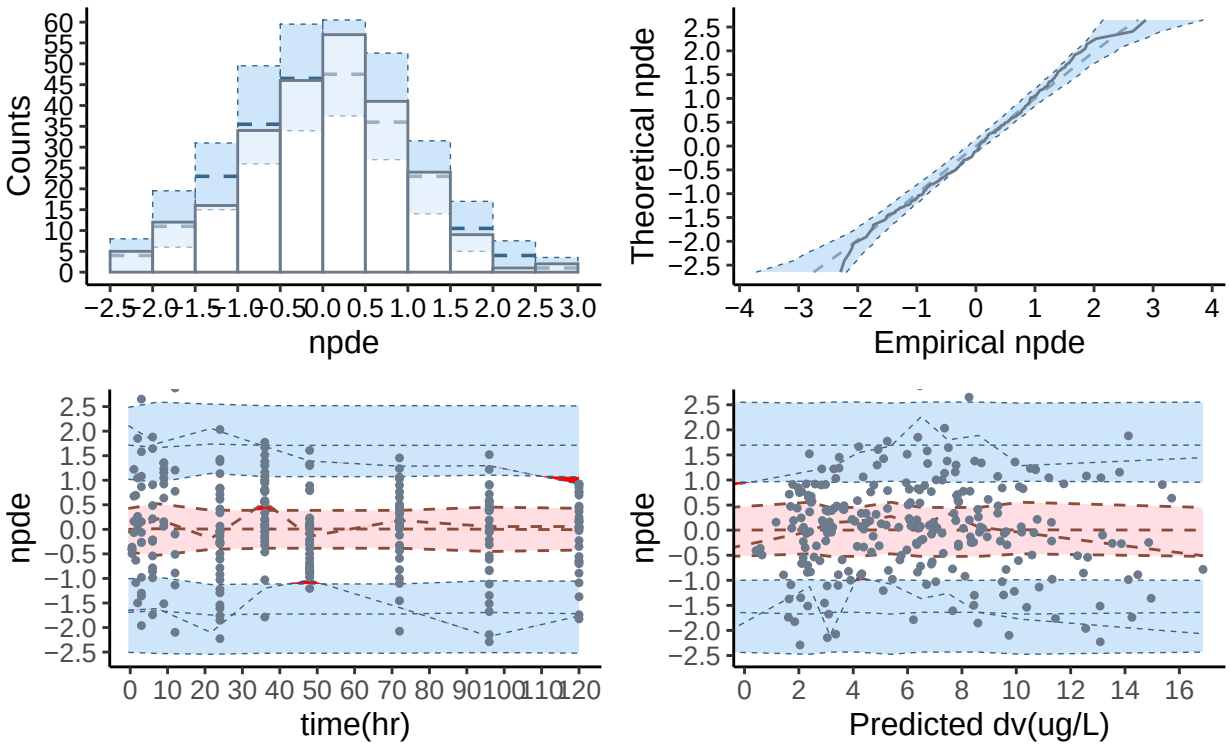


- **solved** P(Y<LOQ) currently fails **Romain**

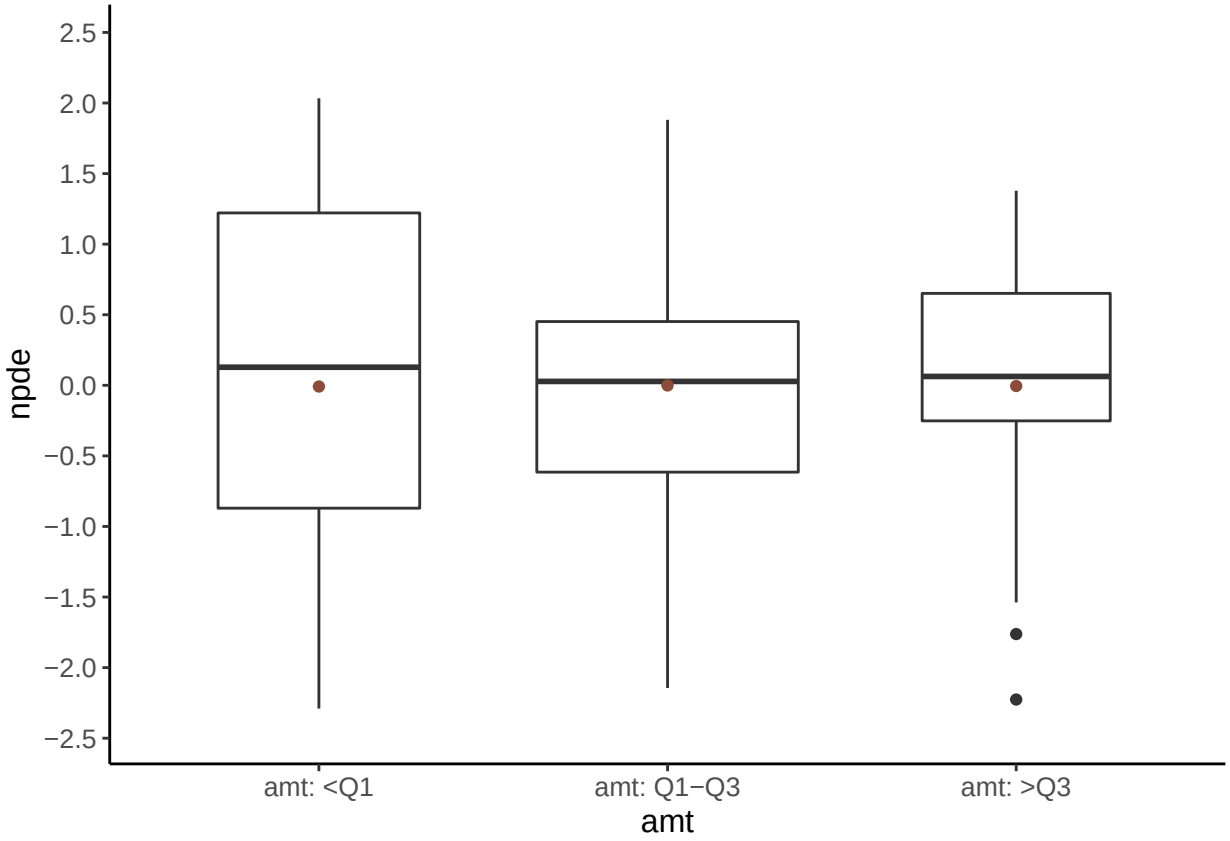


Warfarine

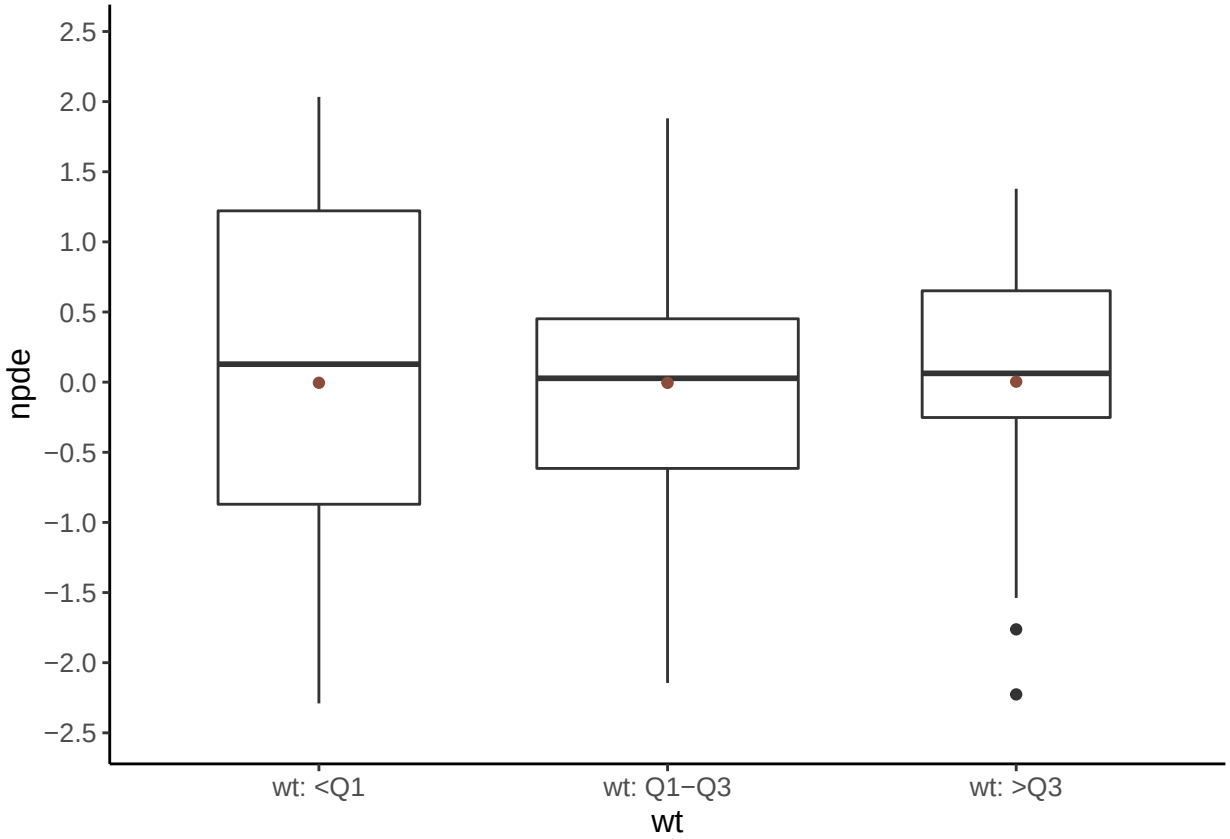
- **TODO:**
  - add to documentation
  - **solved Eco** default plot with cov.scatter should be boxplot => check why not working



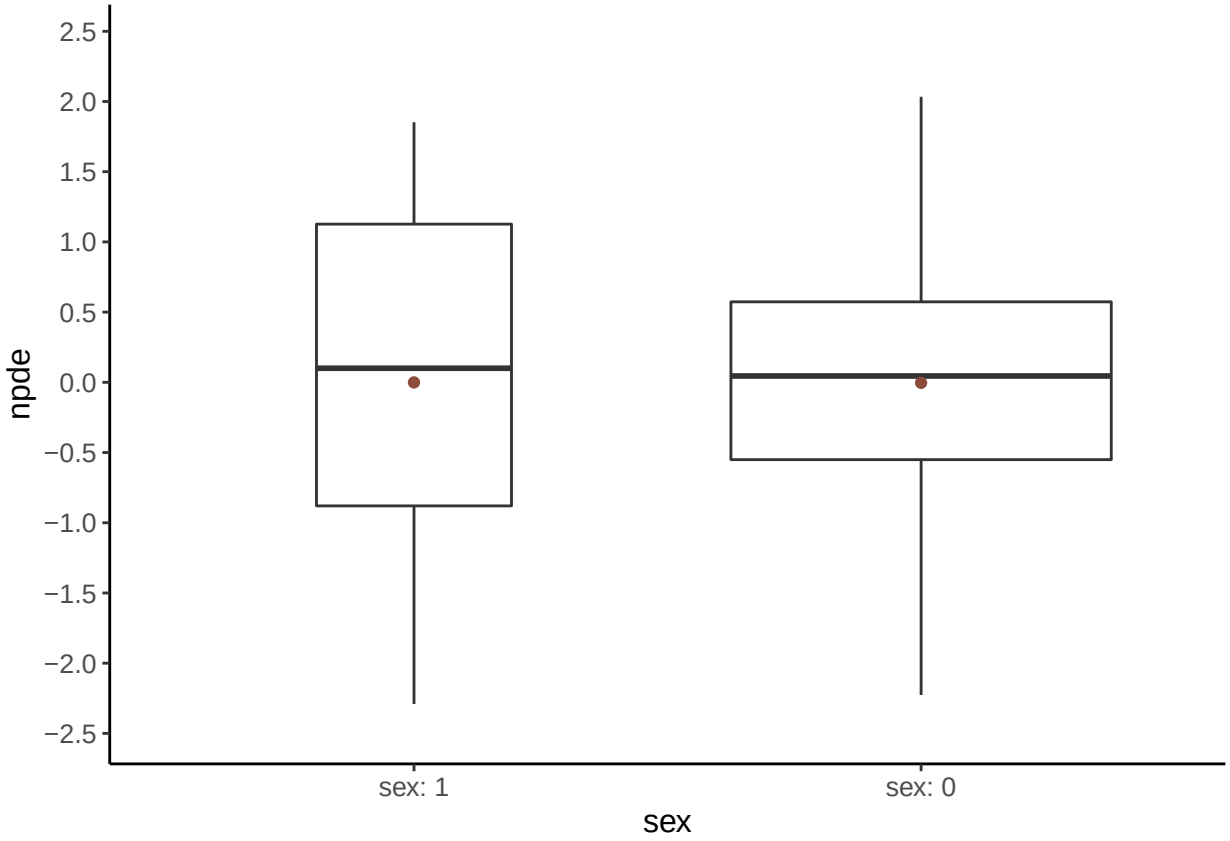

```
## Warning: Removed 2 rows containing non-finite values (stat_boxplot).
```



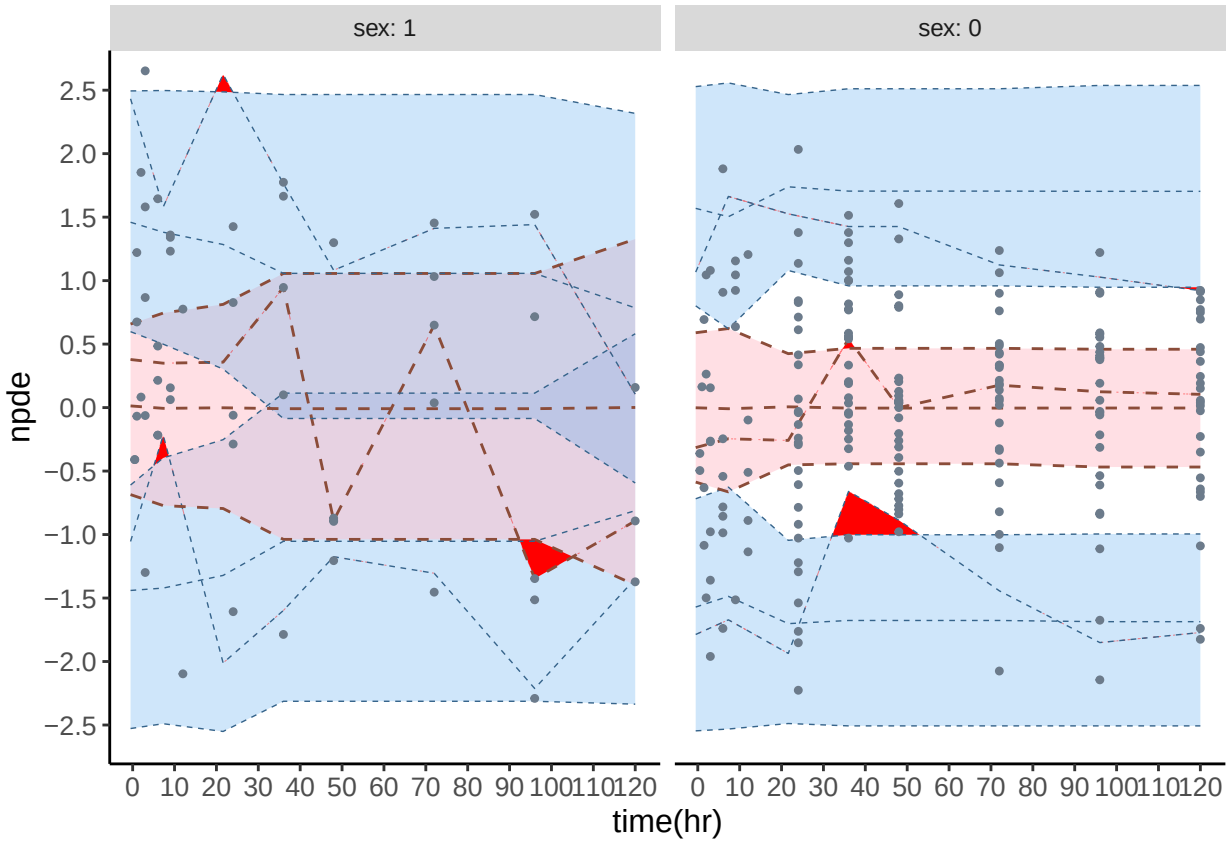

```
## Warning: Removed 2 rows containing non-finite values (stat_boxplot).
```



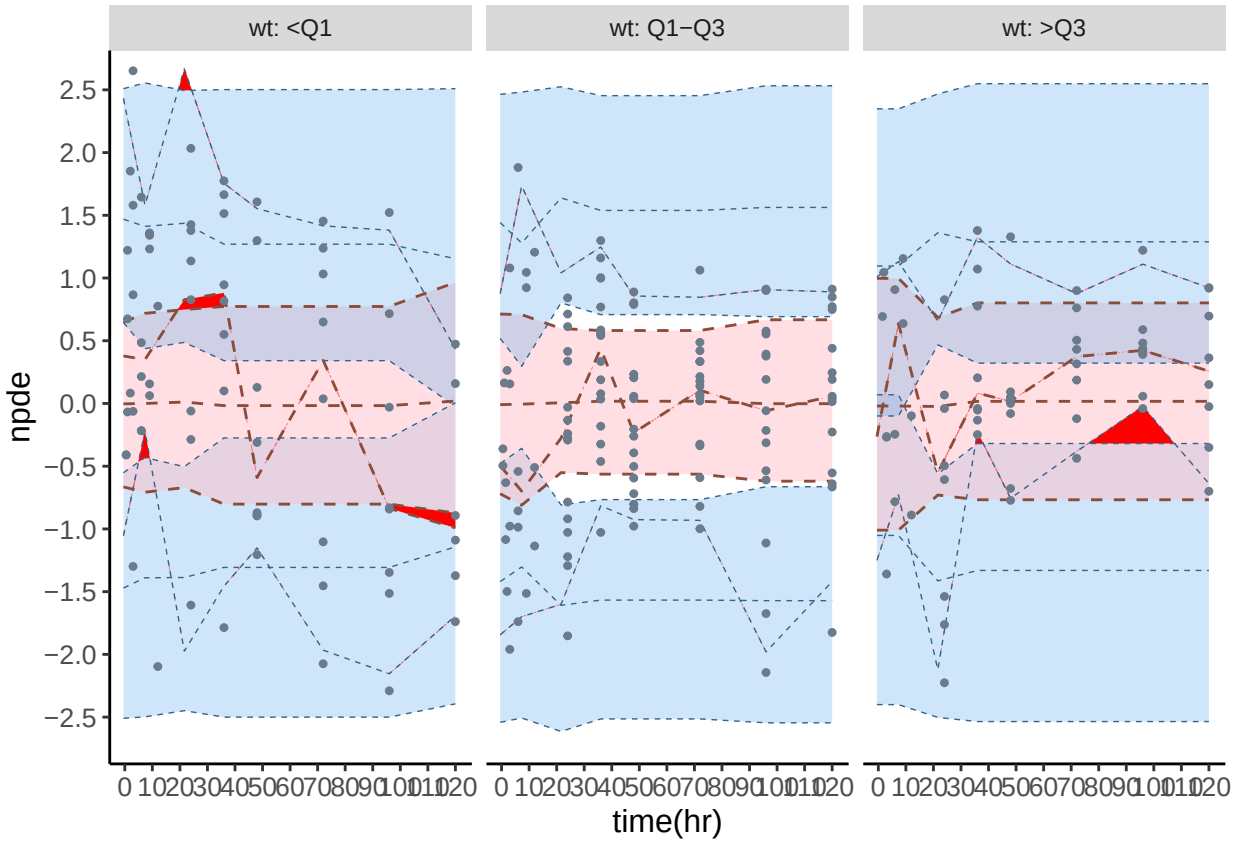

```
## Warning: Removed 2 rows containing non-finite values (stat_boxplot).
```




```
## $npde
## $npde[[1]]
```


sex: 1
sex: 0
npde
2.5
2.0
1.5
1.0
0.5
0.0
−0.5
−1.0
−1.5
−2.0
−2.5
0 10 20 30 40 50 60 70 80 90 100 110 120
time(hr)

```
##
## $npde[[2]]
```



Remifentanil (data will be on website)

Remove from documentation ?

End of file, deactivating development mode

```
## Dev mode: OFF
```