test_jupyter

January 31, 2023

0.0.1 NOTEBOK EXAMPLE IN SPYDER - INVERSE MAPPING OF SHOWER PROBLEM

```python
[1]: import numpy as np
     import time
     import nbconvert

     import sys
     sys.path.append('../')
     from  src.pyprop import nlp_based_approach
```

```python
[2]: def shower2x2(u):

         d = np.zeros(2)
         y = np.zeros(2)
         y[0]=u[0]+u[1]
         if y[0]!=0:
             y[1]=(u[0]*(60+d[0])+u[1]*(120+d[1]))/(u[0]+u[1])
         else:
             y[1]=(60+120)/2

         return y
```

```python
[3]: u0 = np.array([0, 10])
     lb = np.array([0, 0])
     ub = np.array([100,100])

     DOS_bound = np.array([[17.5, 21.0],
                           [80.0, 100.0]])

     DOSresolution = [10, 10]


     t = time.time()
     fDIS, fDOS, message = nlp_based_approach(DOS_bound,
                                              DOSresolution,
                                              shower2x2,
                                              u0,
```
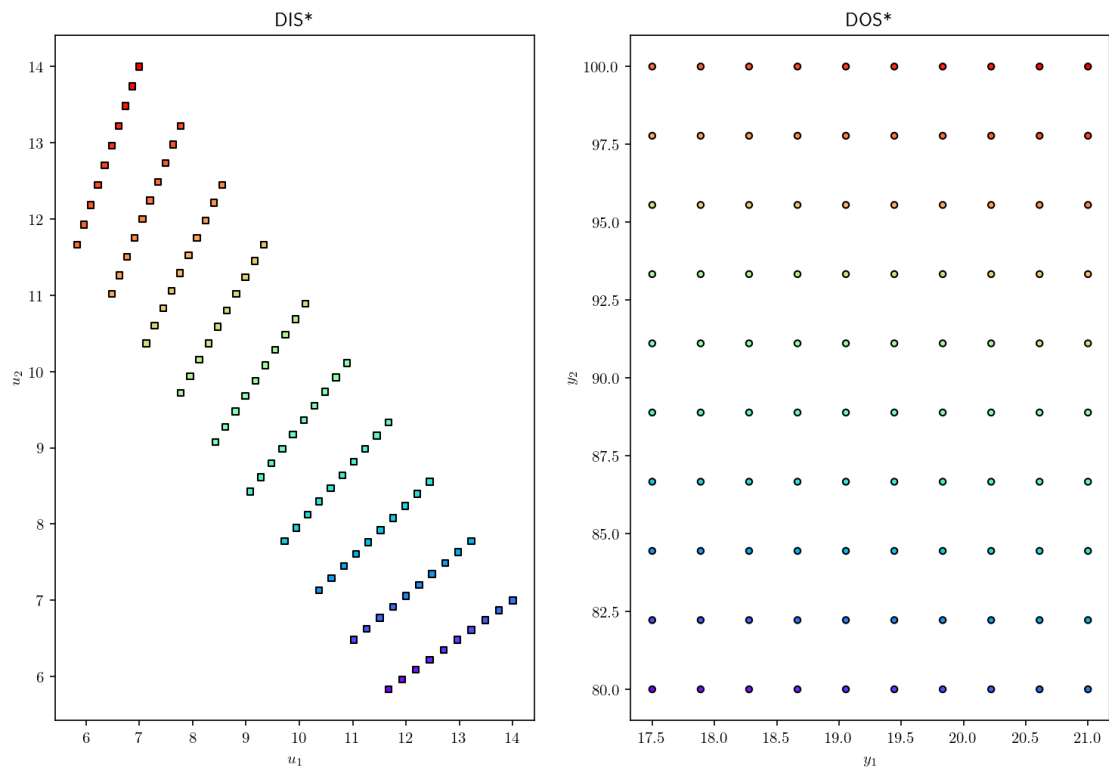
```
                                         lb,
                                         ub,
                                         method='ipopt',
                                         plot=True,
                                         ad=False)

elapsed = time.time() - t
```

100%| | 100/100 [00:08<00:00, 12.26it/s]