Homework

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1 Problem 1

This code uses measure the speed of DEoptim and the efficiency of DEoptim DEoptim find the minimum of self-made function wild. Higher Popsize lead to less trial times while increasing the time. OFpar increases the trial time by running the experiment for a few more time.

To compare to the Pi experiment. We can vary the upper and lower bound and observe how it changes the run time. That way we can model the efficiency

```
seedInit = 8696

lowerBnd = -50

upperBnd = 50

iterLmt  = 800

popSize  = 1024

***** summary of DEoptim object *****

best member   :  -15.8145

best value    :  0
```

```
after          :  7 generations

fn evaluated   :  16 times

************************************


seedInit = 5672

lowerBnd = -50

upperBnd = 50

iterLmt  = 800

popSize  = 64

***** summary of DEoptim object *****

best member    :  -15.81497

best value     :  0

after          :  13 generations

fn evaluated   :  28 times

************************************


seedInit = 785

lowerBnd = -100 -100

upperBnd = 100 100

iterLmt  = 100

popSize  = 256


***** summary of DEoptim object *****

best member    :  -15.66071 -15.81518

best value     :  0.00923
```

```
after        :  100 generations

fn evaluated  :  202 times

************************************


lowerBnd = -1e+05 -1e+05

upperBnd = 1e+05 1e+05

iterLmt  = 2000

popSize  = 256


***** summary of DEoptim object *****

best member   :  -15.81514 -15.81487

best value    :  0

after         :  216 generations

fn evaluated  :  434 times

************************************


seedInit = 4728

lowerBnd = -1e+10 -1e+10

upperBnd = 1e+10 1e+10

iterLmt  = 2000

popSize  = 256


***** summary of DEoptim object *****

best member   :  -15.81554 -15.81495

best value    :  0
```

```
after          :  251 generations

fn evaluated   :  504 times

***********************************
```