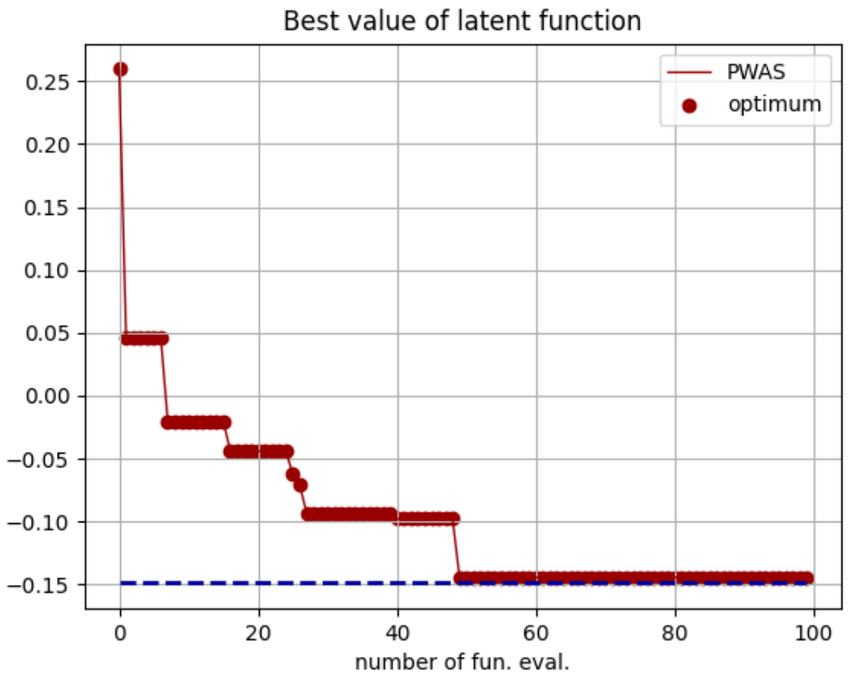
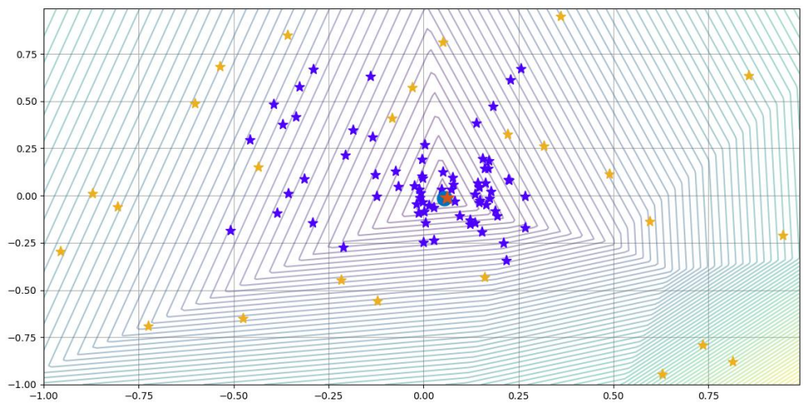
Note that details of the tested benchmarks and PWAS/PWASp parameters can be found in file “other_benchmakrs.py”

2-D benchmarks with box constraints (NLP)

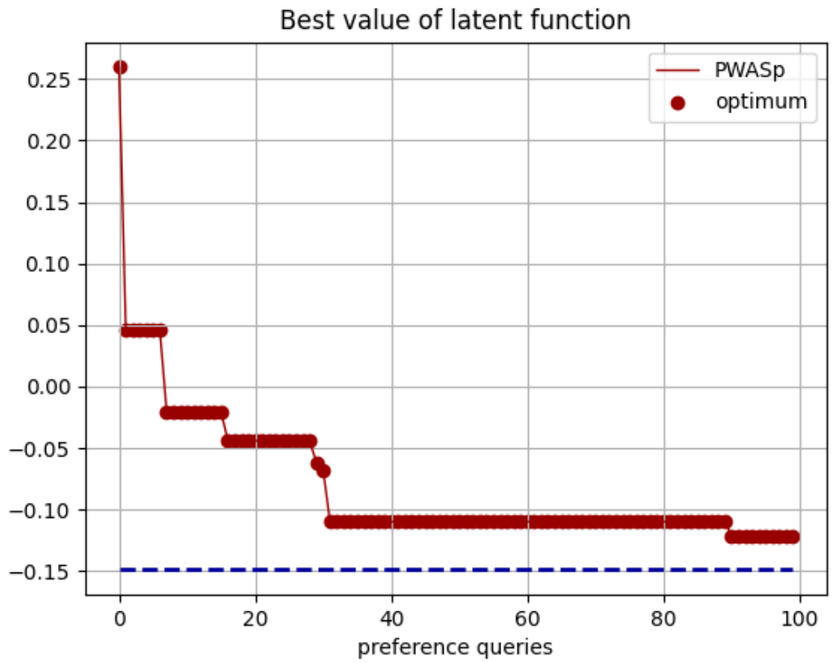
benchmark = "PWA_example" (two continuous variables)

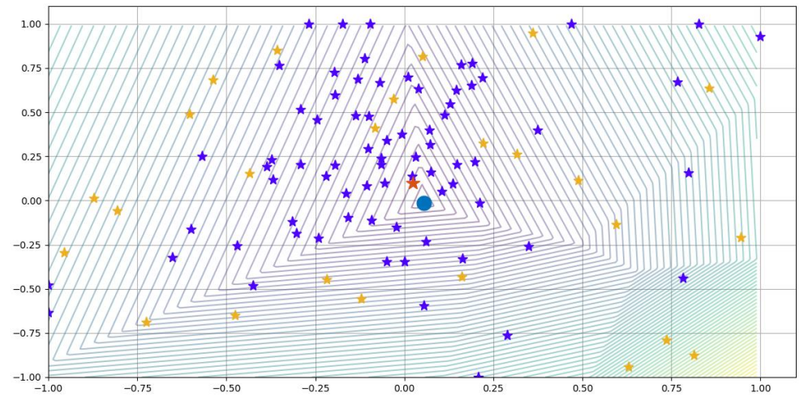
PWAS





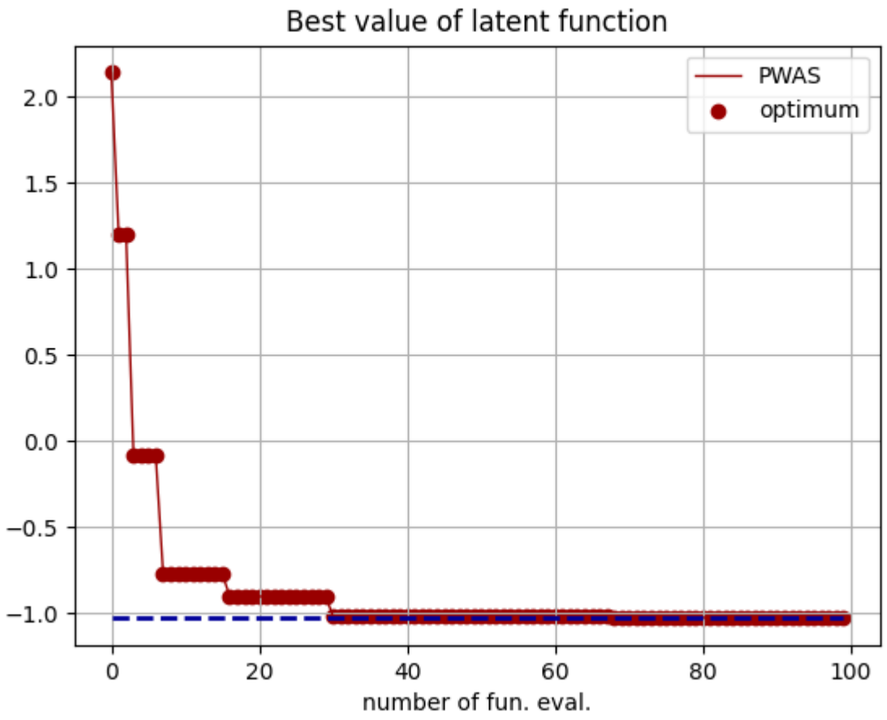
PWASp

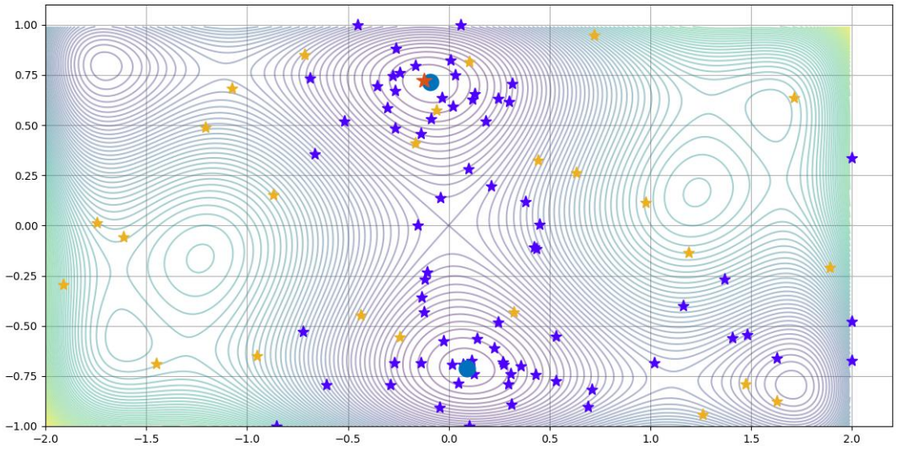




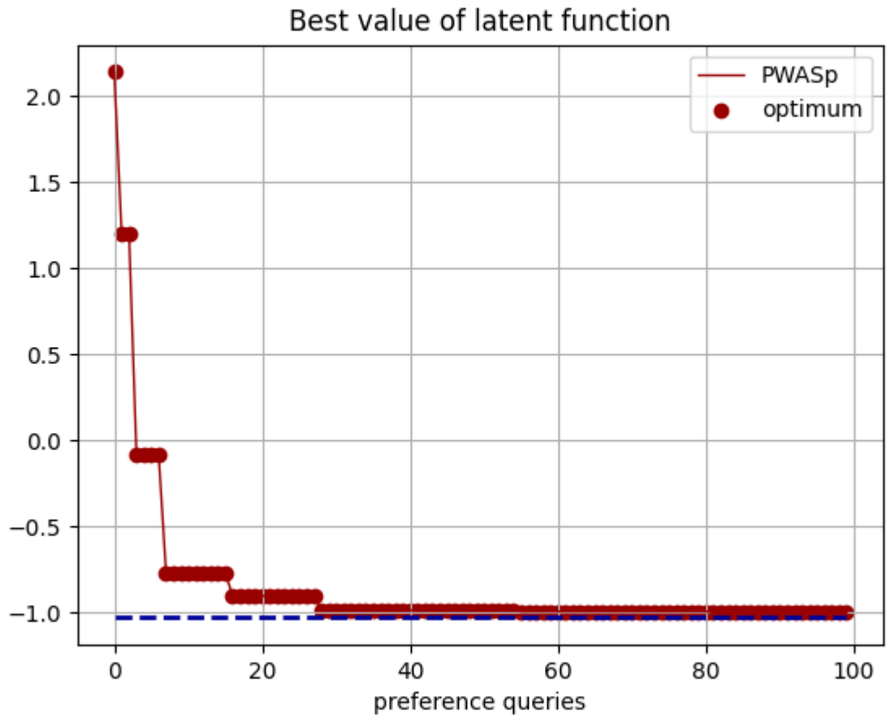
benchmark="camelsixhumps" (two continuous variables)

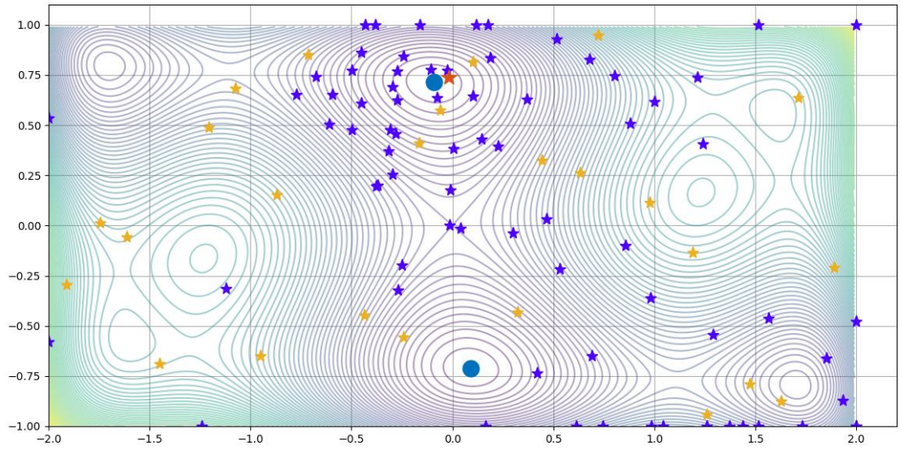
PWAS





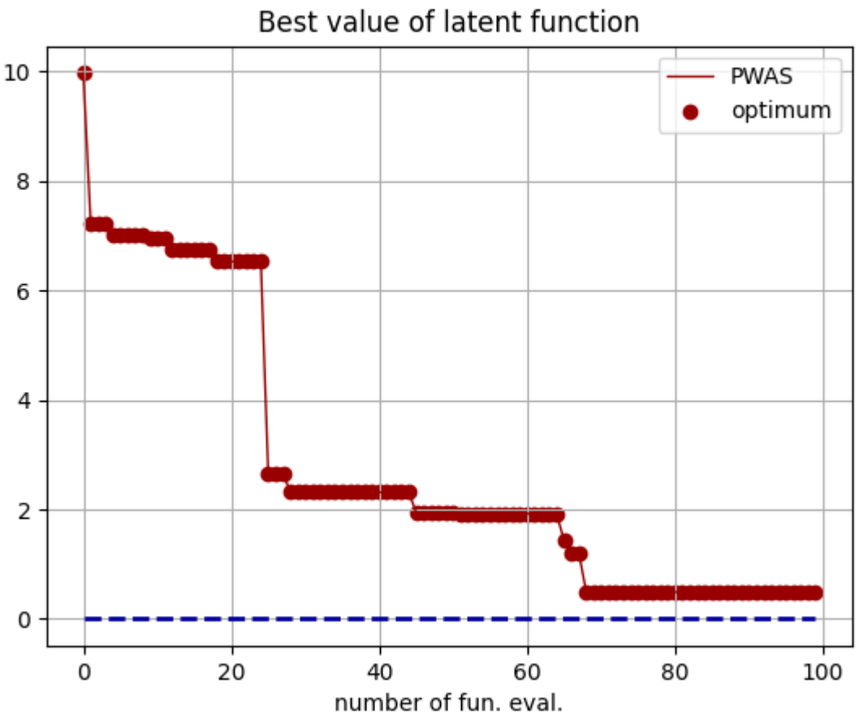
PWASp

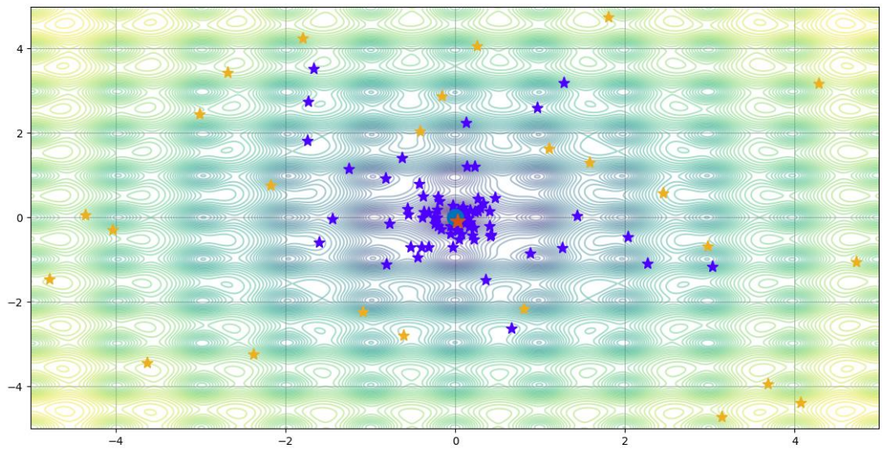




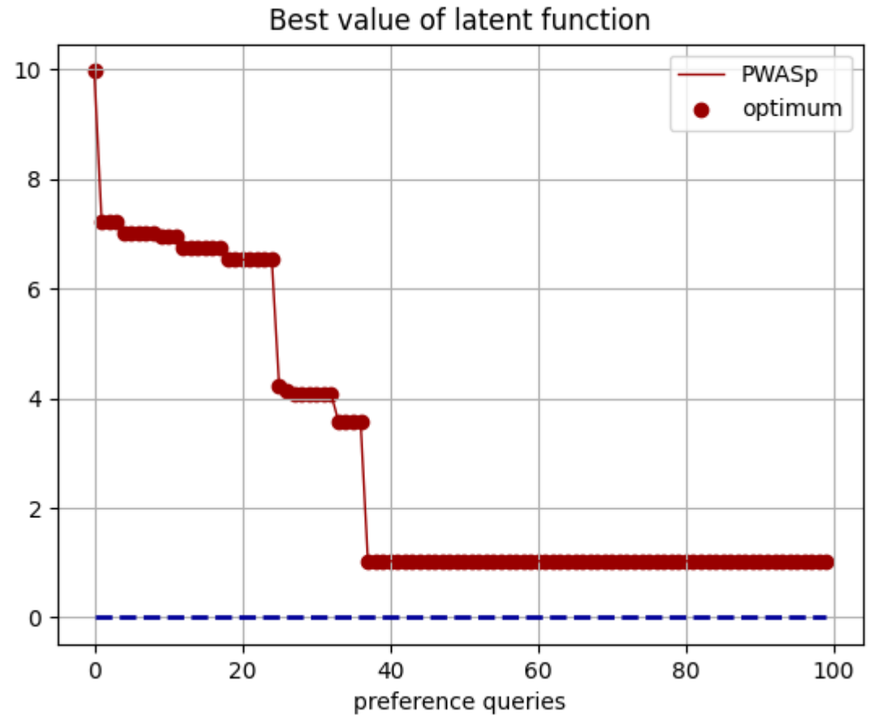
Benchmark = "ackley"(two continuous variables)

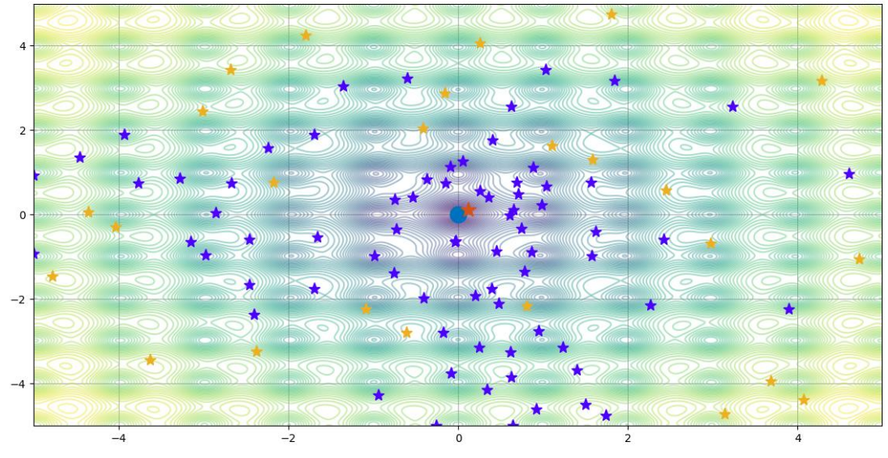
PWAS





PWASp

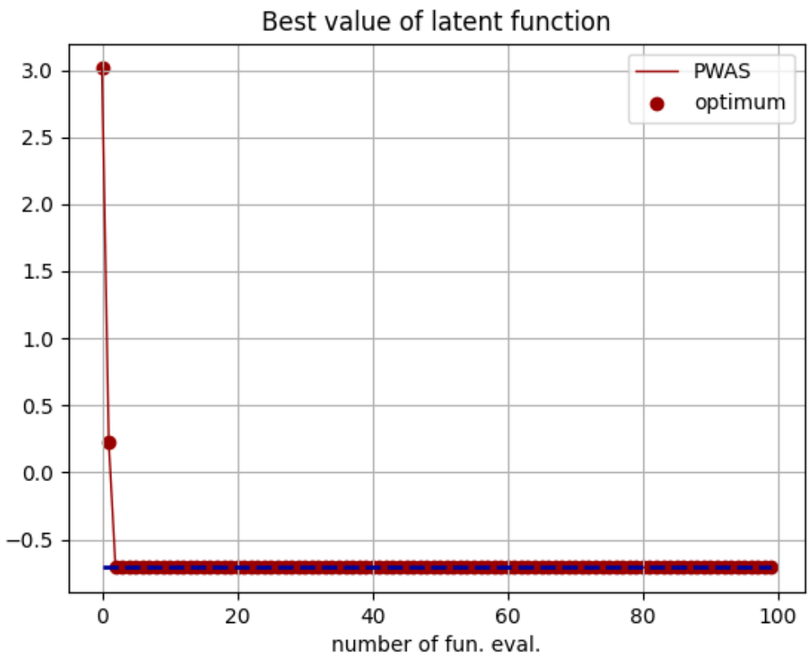


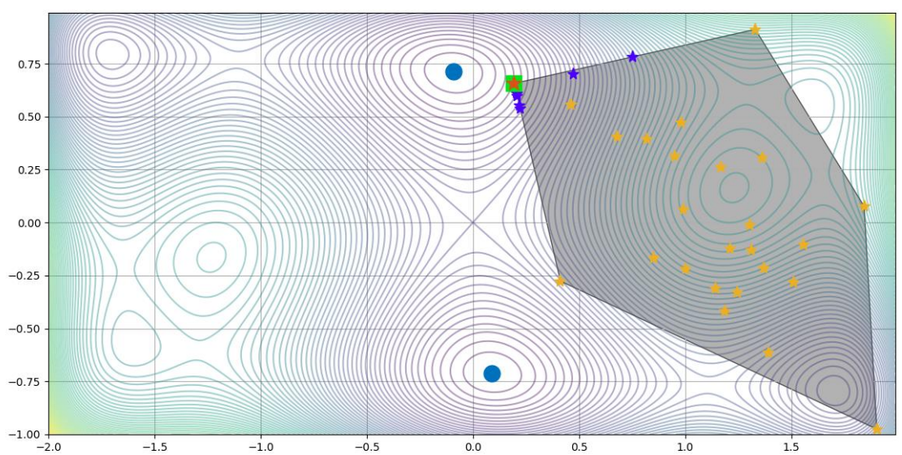


2-D benchmarks with box and linear constraints (NLP)

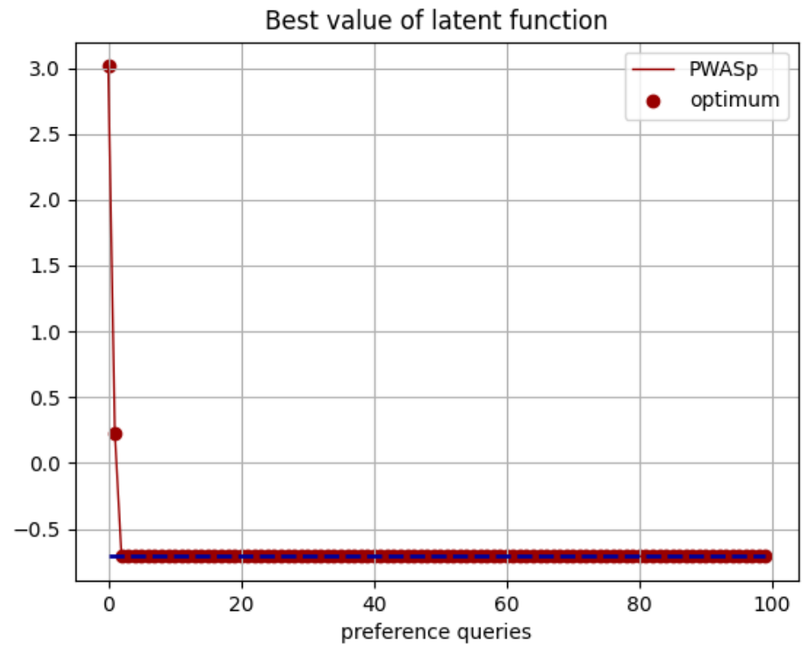
Benchmark = 'camelsixhumps-linearconstr' # camelsixhumps with 5 known linear constraints, optimal is at intersection

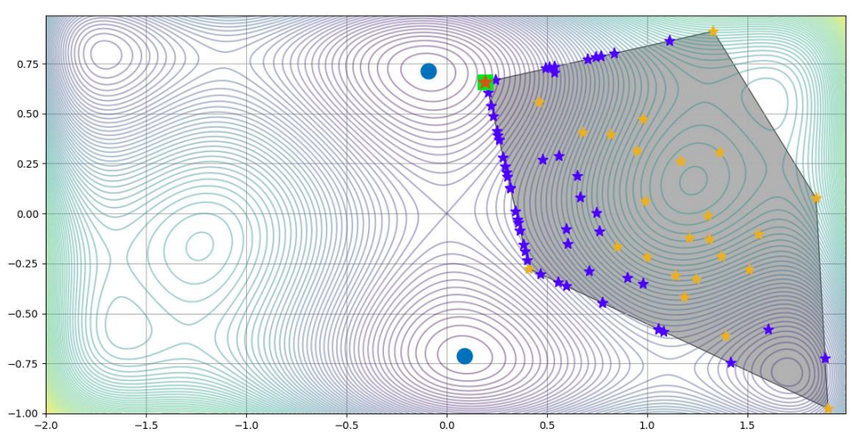
PWAS





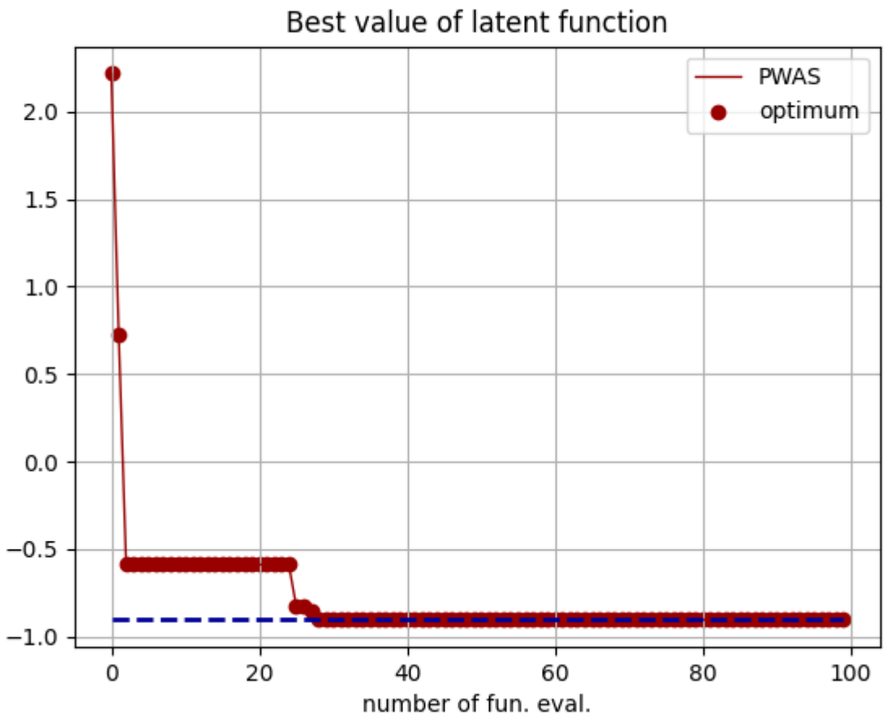
PWASp

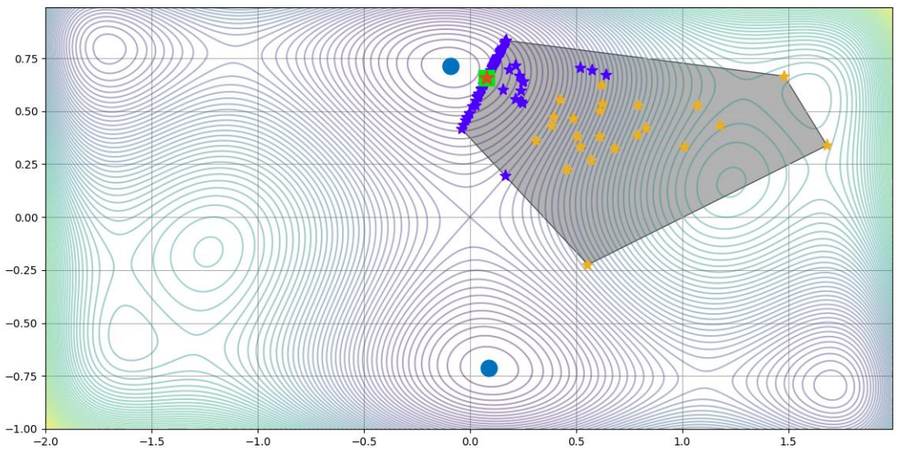




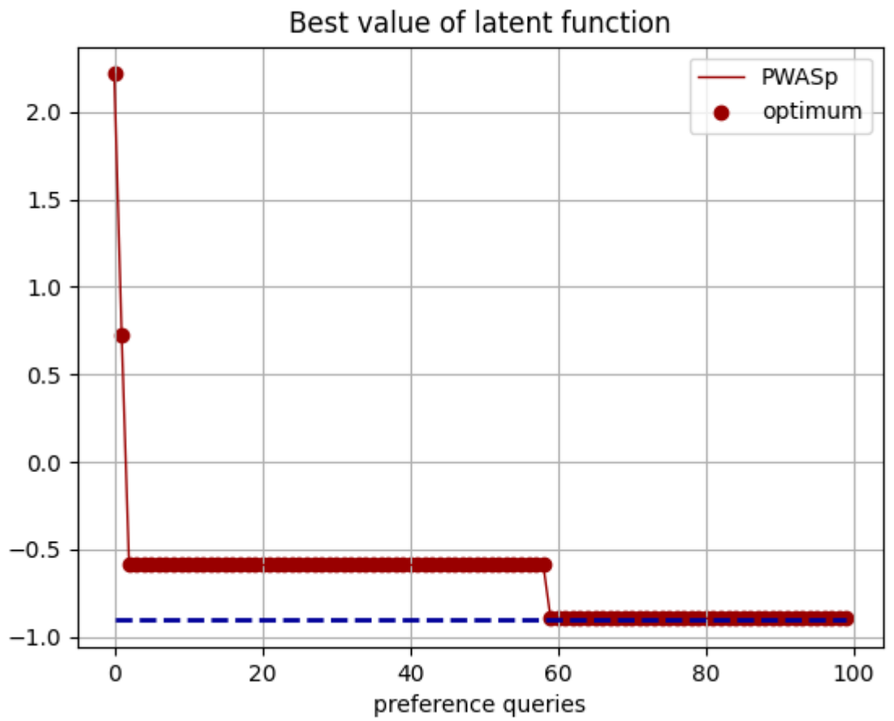
```
Benchmark = 'camelsixhumps-linearconstr_2' #camelsixhumps with 5 known linear constraints
```

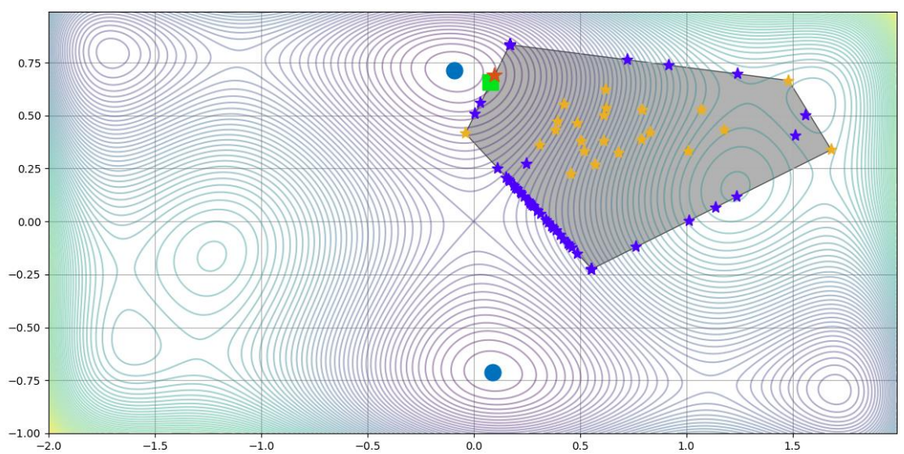
PWAS





PWASp

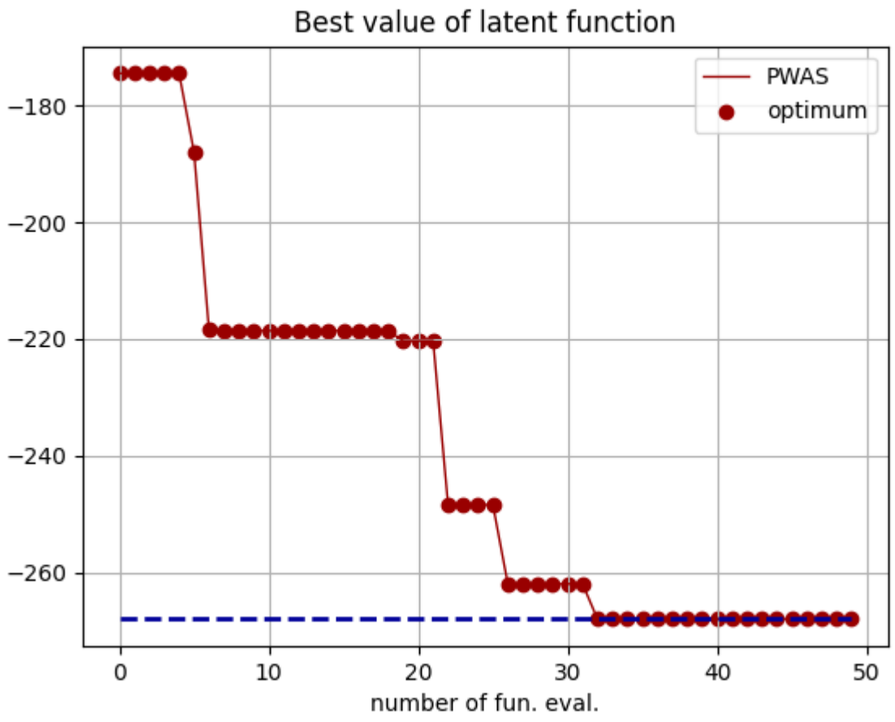




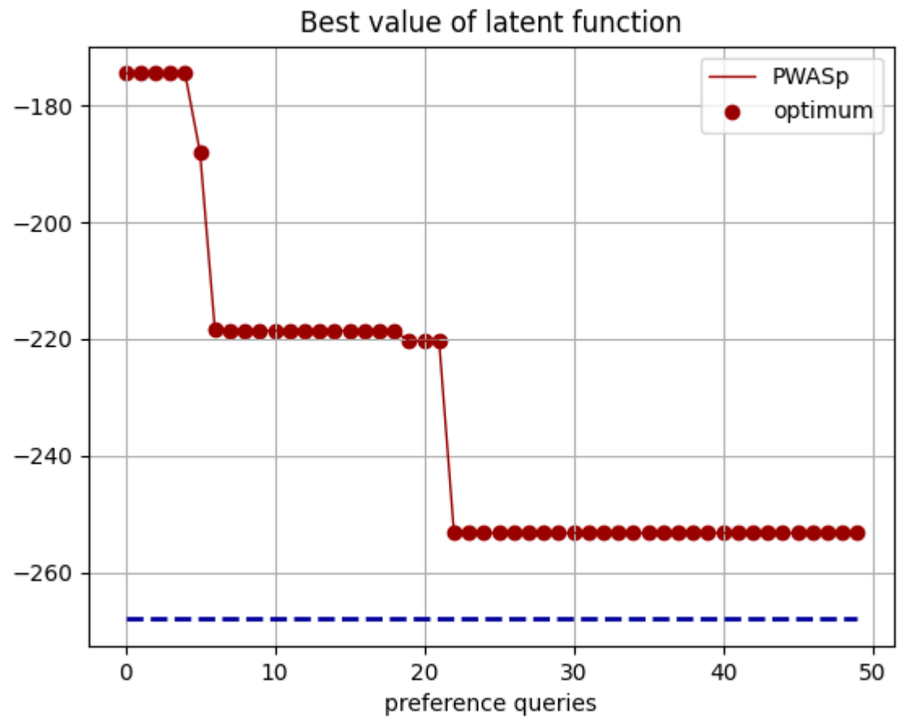
High dimension benchmarks with box and linear constraints (NLP)

Benchmark = "Bunnag6" # 10-D, 11 linear inequality constraints, excessive number of vertices (1036)

PWAS



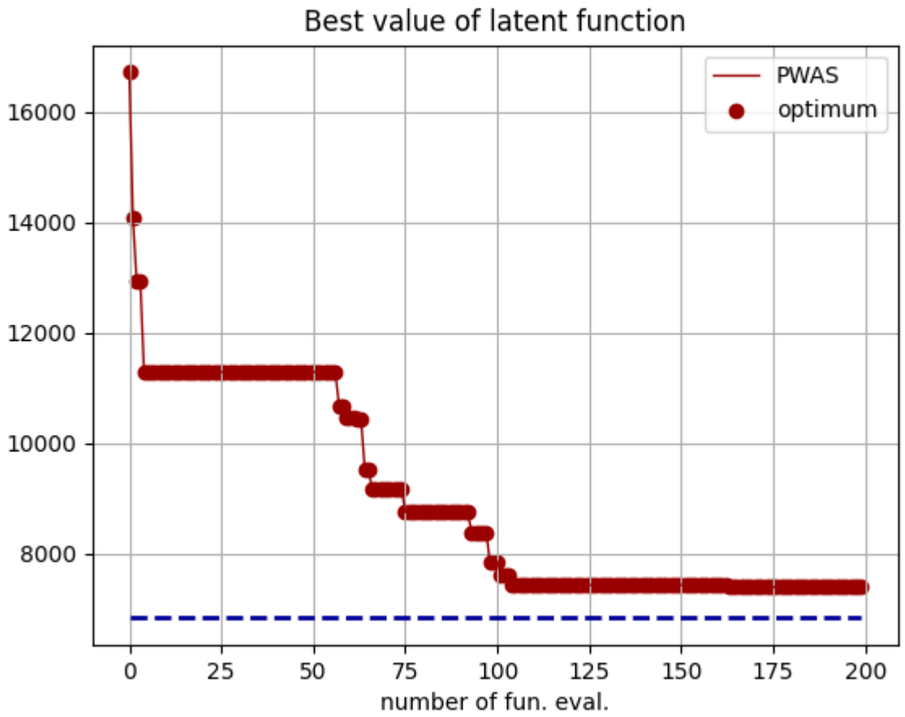
PWASp



MIP from MIP library

benchmark = "gen-ip054_2" # 30 integer variables, treat integer variable as categorical variable

PWAS



PWASp