

Schwefel Function

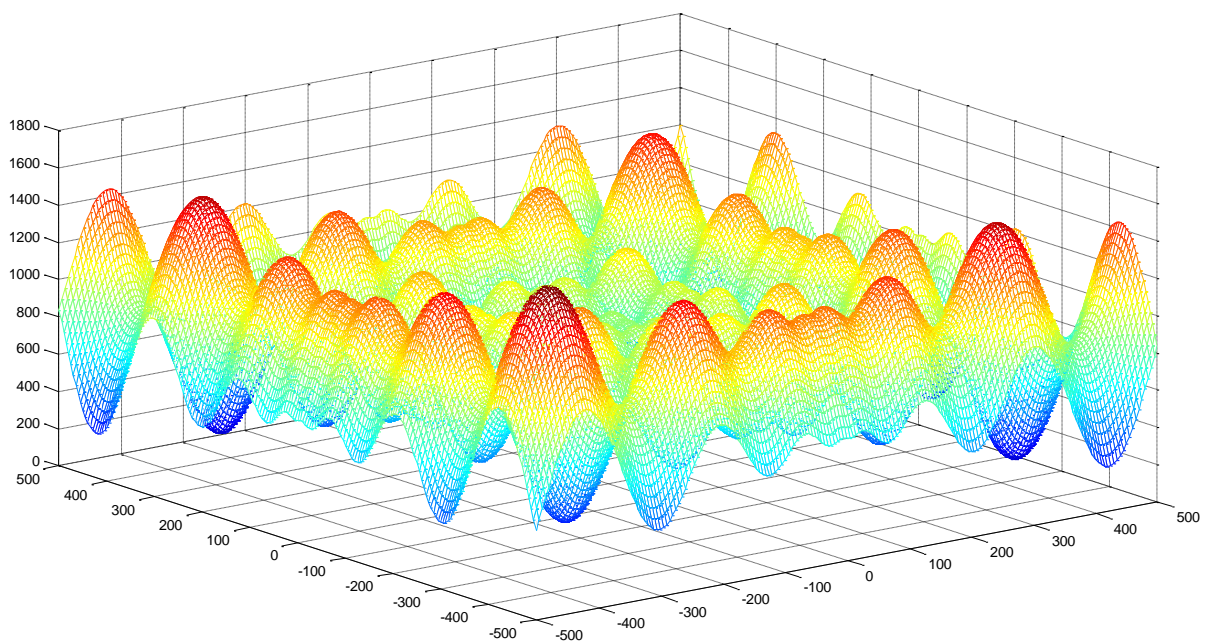
$$f(x) = 418.9829n - \sum_{i=1}^n \left(x_i \sin \sqrt{|x_i|} \right)$$

Search domain: $-500 \leq x_i \leq 500, i = 1, 2, \dots, n$

Number of local minima: several local minima

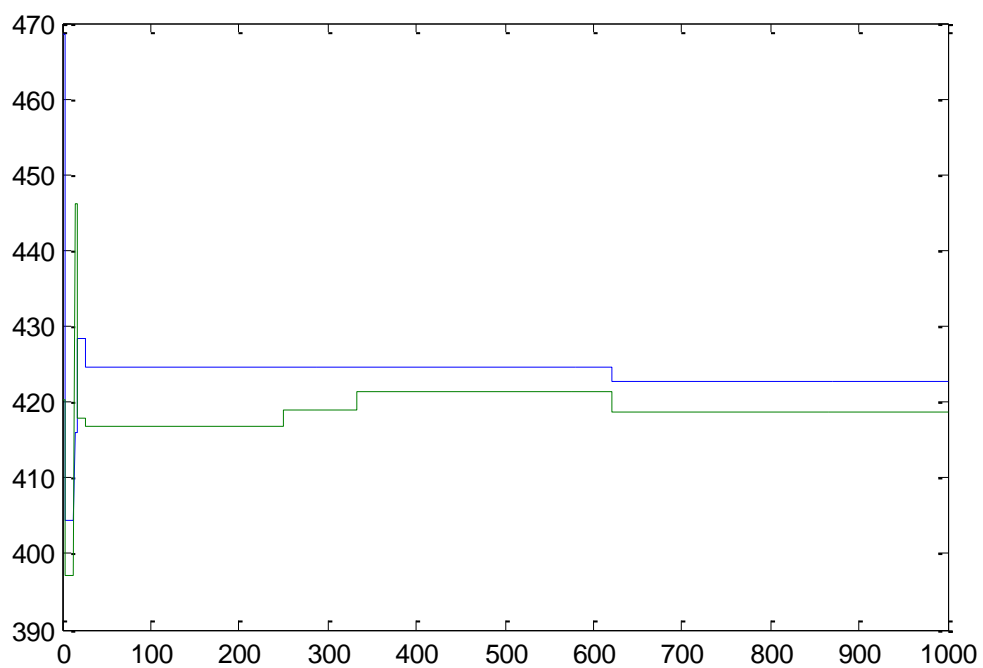
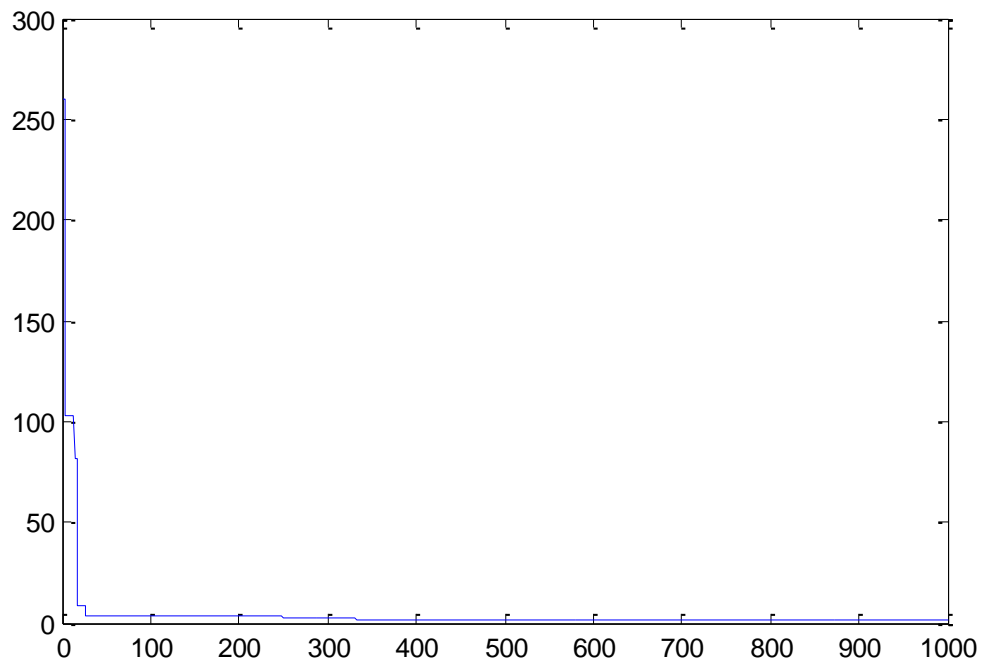
The global minima: $\mathbf{x}^* = (421, \dots, 421); f(\mathbf{x}^*) = 1.038$

Graph for $n = 2$:

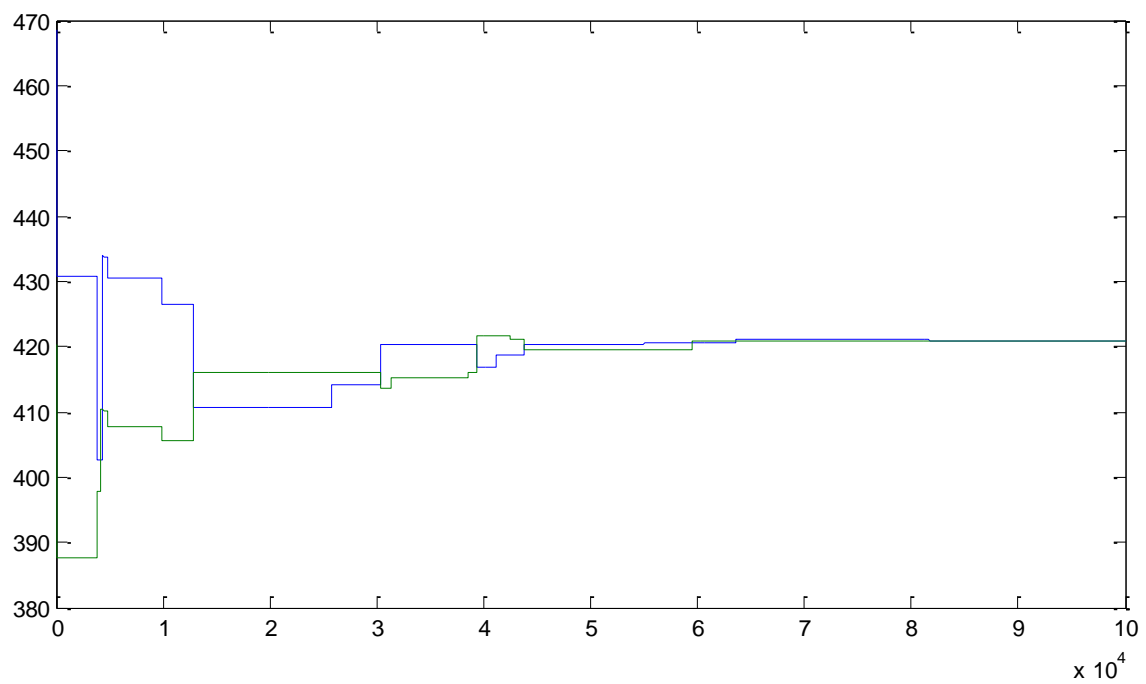
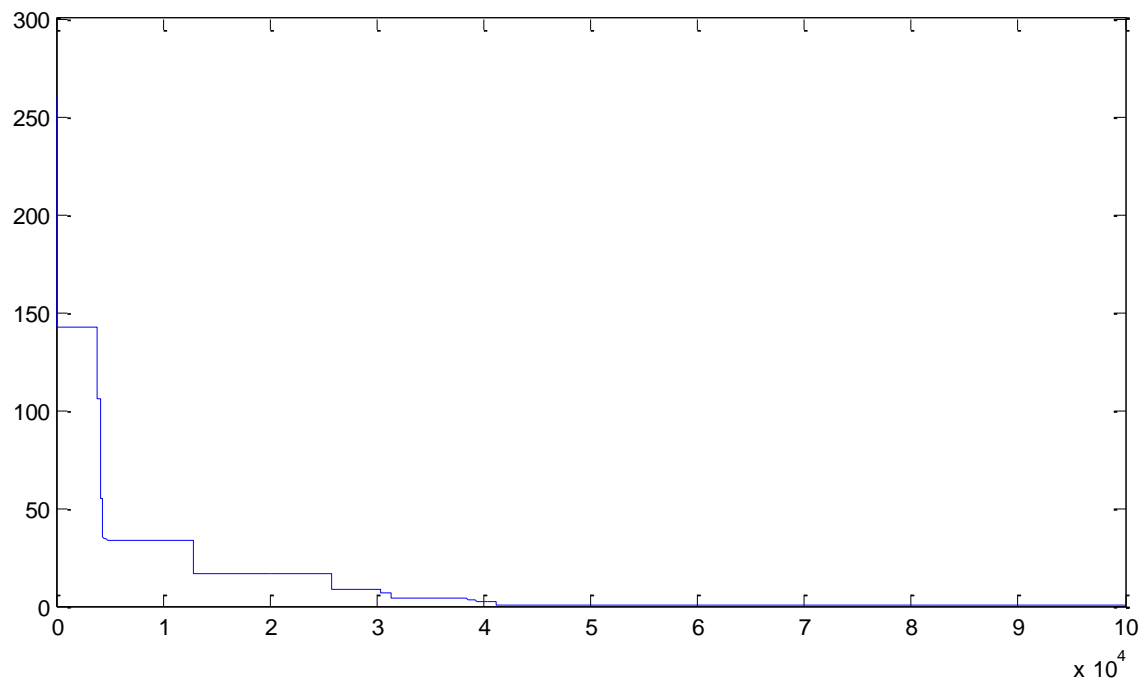


Using RCGA with:

```
pop = RemSel(rcga,pop,fitness);           % remainder stochastic sample with replacement  
[pop,nxover] = rArXover(rcga,pop);       % arithmetical crossover  
[pop,nmutat] = rDynaMut(rcga,pop,gen);   % dynamic mutation
```



```
rcga.rseed = 35712
rcga.popsiz = 20
rcga.pcross = 1.0
rcga.pmutat = 0.5
maxgen = 1000
rcga.objsofarbest = 1.0379
rcga.chromsofarbest = [ 422.7231, 418.6990]
```



```
rcga.rseed = 35712
rcga.popsiz = 20
rcga.pcross = 0.9
rcga.pmutat = 0.02
maxgen = 100000
rcga.objsofarbest = 0.00010433
rcga.chromsofarbest = [ 420.9732, 420.9441]
```