

```
>> fa_mincon
    parameters [n N_iteration alpha betamin gamma]
```

Solve the simple spring design problem ...

```
bestsolution =
```

```
    0.053576542931896    0.403798376709939    8.985595400187918
```

```
bestobj =
```

```
    0.012733199472784
```

```
total_number_of_function_evaluations =
```

```
    20000
```

```
>> fa_ndim
    parameters [n N_iteration alpha betamin gamma]
```

```
bestsolution =
```

```
Columns 1 through 5
```

```
    1.000036387734197    0.999948415782068    0.999899989886696    0.999915318866246 ✓
0.999814685610164
```

```
Columns 6 through 10
```

```
    0.999888283408055    1.000078848334043    1.000018114119038    0.999894174692523 ✓
1.000001294642462
```

```
Columns 11 through 15
```

```
    0.999939880149542    1.000046230580348    0.999955909550300    1.000035891794797 ✓
1.000005603727638
```

```
bestobj =
```

```
    9.474104223453691e-08
```

```
total_number_of_function_evaluations =
```

```
    10000
```

```
>> firefly_simple
n=number of fireflies
MaxGeneration=number of pseudo time steps
```

ans =

-4.006584680710244	4.083170271136409	0.993063517206956
4.076791758985568	4.023778962623619	0.993558423172544
4.053695466987620	4.005241573366966	0.997093554647802
3.960300579311401	4.027222241356965	0.997685587963629
-4.020783938025531	4.039271808016355	0.998027700559017
4.035612575702925	3.992037204594867	0.998669224609100
-0.067024804393667	-3.961118035549006	1.988028019779821
-0.016254955284469	-3.944245911404113	1.993266229076650
0.017950046964866	-0.016031642517979	1.998842155653709
-0.020819390777583	-3.992669041825240	1.999026095904019
0.006780725813384	0.015312521711154	1.999439374583531
0.000317979833504	0.004762709047673	1.999954648153034

>>