```
Initial Parameters...
R(load) = 500 ohms
r = 5.00
w = 0.50

---------
INITIAL Particle 1 ::   pos(duty)=   0.40000000    fitness(Output Power)=  10.64447425
INITIAL Particle 2 ::   pos(duty)=   0.60000000    fitness(Output Power)=  23.53304429
INITIAL Particle 3 ::   pos(duty)=   0.80000000    fitness(Output Power)=  88.83299511

================================================
++++++++++++++Start of Iterations++++++++++++++
================================================
Iteration No: 1
c1 =   0.50000000    c2 =   0.50000000
velocity =

    1.0000
    0.5000
         0

Particle 1 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
Particle 2 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
Particle 3 ::   pos(duty)=   0.80000000    fitness(Output Power)=  88.83299511


Updated best Fitness Position =   0.80000000


--------
Iteration No: 2
c1 =   0.50000000    c2 =   0.50000000
velocity =

    0.1250
   -0.1250
         0

Particle 1 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
Particle 2 ::   pos(duty)=   0.82500000    fitness(Output Power)= 112.73373894
Particle 3 ::   pos(duty)=   0.80000000    fitness(Output Power)=  88.83299511


Updated best Fitness Position =   0.82500000


--------
Iteration No: 3
c1 =   0.50000000    c2 =   0.50000000
velocity =

   -0.2500
   -0.0625
    0.0625
```

```
Particle 1 ::   pos(duty)=   0.70000000    fitness(Output Power)=  41.29564226
Particle 2 ::   pos(duty)=   0.76250000    fitness(Output Power)=  65.00563718
Particle 3 ::   pos(duty)=   0.86250000    fitness(Output Power)= 163.13001910


Updated best Fitness Position =   0.86250000


--------
Iteration No: 4
c1 =   0.50000000    c2 =   0.50000000
velocity =

    0.2813
    0.3750
    0.0313

Particle 1 ::   pos(duty)=   0.98125000    fitness(Output Power)=   5.17749886
Particle 2 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
Particle 3 ::   pos(duty)=   0.89375000    fitness(Output Power)= 163.34251938


Updated best Fitness Position =   0.89375000


--------
Iteration No: 5
c1 =   0.50000000    c2 =   0.50000000
velocity =

   -0.7813
   -0.2656
    0.0156

Particle 1 ::   pos(duty)=   0.20000000    fitness(Output Power)=   6.15089703
Particle 2 ::   pos(duty)=   0.68437500    fitness(Output Power)=  37.50398015
Particle 3 ::   pos(duty)=   0.90937500    fitness(Output Power)= 121.69491312


Updated best Fitness Position =   0.89375000


--------
Iteration No: 6
c1 =   0.50000000    c2 =   0.50000000
velocity =

    2.5938
    0.7422
   -0.0703

Particle 1 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
Particle 2 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
Particle 3 ::   pos(duty)=   0.83906250    fitness(Output Power)= 129.76029857
```

```
Updated best Fitness Position =   0.89375000


--------
Iteration No: 7
c1 =   0.50000000    c2 =   0.50000000
velocity =

    0.5313
   -0.0820
    0.2383

Particle 1 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
Particle 2 ::   pos(duty)=   0.86796875    fitness(Output Power)= 170.55392190
Particle 3 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295


Updated best Fitness Position =   0.86796875


--------
Iteration No: 8
c1 =   0.50000000    c2 =   0.50000000
velocity =

   -0.5645
   -0.0410
   -0.2266

Particle 1 ::   pos(duty)=   0.38554687    fitness(Output Power)=  10.64447425
Particle 2 ::   pos(duty)=   0.82695312    fitness(Output Power)= 115.12029457
Particle 3 ::   pos(duty)=   0.72343750    fitness(Output Power)=  48.62409723


Updated best Fitness Position =   0.86796875


--------
Iteration No: 9
c1 =   0.50000000    c2 =   0.50000000
velocity =

    1.7100
    0.1846
    0.6738

Particle 1 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
Particle 2 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
Particle 3 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295


Updated best Fitness Position =   0.86796875
```

```
--------
Iteration No: 10
c1 =   0.50000000    c2 =   0.50000000
velocity =

    0.0249
   -0.3179
   -0.0088

Particle 1 ::   pos(duty)=   0.97490234    fitness(Output Power)=   9.31949576
Particle 2 ::   pos(duty)=   0.63212891    fitness(Output Power)=  28.31386375
Particle 3 ::   pos(duty)=   0.94121094    fitness(Output Power)=  51.28385164


Updated best Fitness Position =   0.86796875


--------
Iteration No: 11
c1 =   0.50000000    c2 =   0.50000000
velocity =

   -0.9421
    1.0203
   -0.3062

Particle 1 ::   pos(duty)=   0.03276367    fitness(Output Power)=   4.63043708
Particle 2 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
Particle 3 ::   pos(duty)=   0.63505859    fitness(Output Power)=  28.31386375


Updated best Fitness Position =   0.86796875


--------
Iteration No: 12
c1 =   0.50000000    c2 =   0.50000000
velocity =

    3.2850
    0.1000
    1.0759

Particle 1 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
Particle 2 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
Particle 3 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295


Updated best Fitness Position =   0.86796875


--------
Iteration No: 13
c1 =   0.50000000    c2 =   0.50000000
velocity =
```

```
    0.8124
   -0.3602
    0.1923

Particle 1 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
Particle 2 ::   pos(duty)=   0.58983154    fitness(Output Power)=  22.83970002
Particle 3 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295


Updated best Fitness Position =   0.86796875


--------
Iteration No: 14
c1 =   0.50000000    c2 =   0.50000000
velocity =

   -0.4239
    1.2106
   -0.2496

Particle 1 ::   pos(duty)=   0.52614136    fitness(Output Power)=  17.19786443
Particle 2 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
Particle 3 ::   pos(duty)=   0.70042725    fitness(Output Power)=  41.91922067


Updated best Fitness Position =   0.86796875


--------
Iteration No: 15
c1 =   0.50000000    c2 =   0.50000000
velocity =

    1.0773
    0.1951
    0.7774

Particle 1 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
Particle 2 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
Particle 3 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295


Updated best Fitness Position =   0.86796875


--------
Iteration No: 16
c1 =   0.50000000    c2 =   0.50000000
velocity =

   -0.2914
   -0.3126
    0.0430
```

```
Particle 1 ::   pos(duty)=   0.65856476    fitness(Output Power)=  32.31222899
Particle 2 ::   pos(duty)=   0.63741608    fitness(Output Power)=  28.98657571
Particle 3 ::   pos(duty)=   0.99298401    fitness(Output Power)=   0.70849998


Updated best Fitness Position =   0.86796875


--------
Iteration No: 17
c1 =   0.50000000    c2 =   0.50000000
velocity =

    0.4814
    0.9965
   -0.5391

Particle 1 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
Particle 2 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
Particle 3 ::   pos(duty)=   0.45385284    fitness(Output Power)=  12.85360770


Updated best Fitness Position =   0.86796875


--------
Iteration No: 18
c1 =   0.50000000    c2 =   0.50000000
velocity =

   -0.5894
    0.0881
    1.8655

Particle 1 ::   pos(duty)=   0.36061211    fitness(Output Power)=   9.90255028
Particle 2 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
Particle 3 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295


Updated best Fitness Position =   0.86796875


--------
Iteration No: 19
c1 =   0.50000000    c2 =   0.50000000
velocity =

    1.8222
   -0.3661
    0.5870

Particle 1 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
Particle 2 ::   pos(duty)=   0.58388348    fitness(Output Power)=  22.14373603
Particle 3 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
```

```
Updated best Fitness Position =   0.86796875


--------
Iteration No: 20
c1 =   0.50000000    c2 =   0.50000000
velocity =

    0.0810
    1.2374
   -0.0522

Particle 1 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
Particle 2 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
Particle 3 ::   pos(duty)=   0.89781208    fitness(Output Power)= 153.07746723


Updated best Fitness Position =   0.86796875


--------
Iteration No: 21
c1 =   0.50000000    c2 =   0.50000000
velocity =

   -0.7896
    0.2085
   -0.1109

Particle 1 ::   pos(duty)=   0.16042466    fitness(Output Power)=   5.39209111
Particle 2 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
Particle 3 ::   pos(duty)=   0.78695459    fitness(Output Power)=  79.17533765


Updated best Fitness Position =   0.86796875


--------
Iteration No: 22
c1 =   0.50000000    c2 =   0.50000000
velocity =

    2.7230
   -0.3059
    0.4141

Particle 1 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
Particle 2 ::   pos(duty)=   0.64410765    fitness(Output Power)=  29.65674882
Particle 3 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295


Updated best Fitness Position =   0.86796875
```

```
--------
Iteration No: 23
c1 =   0.50000000    c2 =   0.50000000
velocity =

    0.5314
    0.9664
   -0.1387

Particle 1 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
Particle 2 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
Particle 3 ::   pos(duty)=   0.81134446    fitness(Output Power)=  98.93554831


Updated best Fitness Position =   0.86796875


--------
Iteration No: 24
c1 =   0.50000000    c2 =   0.50000000
velocity =

   -0.5644
    0.0730
    0.2782

Particle 1 ::   pos(duty)=   0.38563554    fitness(Output Power)=  10.64447425
Particle 2 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
Particle 3 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295


Updated best Fitness Position =   0.86796875


--------
Iteration No: 25
c1 =   0.50000000    c2 =   0.50000000
velocity =

    1.7096
   -0.3736
   -0.2066

Particle 1 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
Particle 2 ::   pos(duty)=   0.57635545    fitness(Output Power)=  21.44514320
Particle 3 ::   pos(duty)=   0.74342028    fitness(Output Power)=  56.19331028


Updated best Fitness Position =   0.86796875


--------
Iteration No: 26
c1 =   0.50000000    c2 =   0.50000000
```

```
velocity =

    0.0247
    1.2712
    0.5839

Particle 1 ::   pos(duty)=   0.97470285    fitness(Output Power)=   9.48299559
Particle 2 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
Particle 3 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295


Updated best Fitness Position =   0.86796875


--------
Iteration No: 27
c1 =   0.50000000    c2 =   0.50000000
velocity =

   -0.9412
    0.2255
   -0.0538

Particle 1 ::   pos(duty)=   0.03346188    fitness(Output Power)=   4.63043708
Particle 2 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
Particle 3 ::   pos(duty)=   0.89624967    fitness(Output Power)= 157.15215079


Updated best Fitness Position =   0.86796875


--------
Iteration No: 28
c1 =   0.50000000    c2 =   0.50000000
velocity =

    3.2820
   -0.2974
   -0.1038

Particle 1 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
Particle 2 ::   pos(duty)=   0.65257668    fitness(Output Power)=  30.98951381
Particle 3 ::   pos(duty)=   0.79242303    fitness(Output Power)=  83.41176768


Updated best Fitness Position =   0.86796875


--------
Iteration No: 29
c1 =   0.50000000    c2 =   0.50000000
velocity =

    0.8109
    0.9282
```

```
    0.3903

Particle 1 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
Particle 2 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
Particle 3 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295


Updated best Fitness Position =   0.86796875


--------
Iteration No: 30
c1 =   0.50000000    c2 =   0.50000000
velocity =

   -0.4246
    0.0540
   -0.1506

Particle 1 ::   pos(duty)=   0.52538080    fitness(Output Power)=  17.19786443
Particle 2 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
Particle 3 ::   pos(duty)=   0.79943109    fitness(Output Power)=  88.39092122


Updated best Fitness Position =   0.86796875


--------
Iteration No: 31
c1 =   0.50000000    c2 =   0.50000000
velocity =

    1.0807
   -0.3832
    0.3319

Particle 1 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
Particle 2 ::   pos(duty)=   0.56682780    fitness(Output Power)=  20.74391235
Particle 3 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295


Updated best Fitness Position =   0.86796875


--------
Iteration No: 32
c1 =   0.50000000    c2 =   0.50000000
velocity =

   -0.2897
    1.3141
   -0.1798

Particle 1 ::   pos(duty)=   0.66027600    fitness(Output Power)=  32.96983973
Particle 2 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
```

```
Particle 3 ::   pos(duty)=   0.77022537    fitness(Output Power)=  68.69345172


Updated best Fitness Position =   0.86796875


--------
Iteration No: 33
c1 =   0.50000000    c2 =   0.50000000
velocity =

    0.4737
    0.2469
    0.4633

Particle 1 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
Particle 2 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
Particle 3 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295


Updated best Fitness Position =   0.86796875


--------
Iteration No: 34
c1 =   0.50000000    c2 =   0.50000000
velocity =

   -0.5932
   -0.2867
   -0.1141

Particle 1 ::   pos(duty)=   0.35676181    fitness(Output Power)=   9.15783708
Particle 2 ::   pos(duty)=   0.66329529    fitness(Output Power)=  32.96983973
Particle 3 ::   pos(duty)=   0.83593824    fitness(Output Power)= 125.78673176


Updated best Fitness Position =   0.86796875


--------
Iteration No: 35
c1 =   0.50000000    c2 =   0.50000000
velocity =

    1.8395
    0.8800
    0.1676

Particle 1 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
Particle 2 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
Particle 3 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295


Updated best Fitness Position =   0.86796875
```

```
--------
Iteration No: 36
c1 =   0.50000000    c2 =   0.50000000
velocity =

    0.0897
    0.0299
   -0.2619

Particle 1 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
Particle 2 ::   pos(duty)=   0.97985123    fitness(Output Power)=   5.99499843
Particle 3 ::   pos(duty)=   0.68808428    fitness(Output Power)=  38.77748347


Updated best Fitness Position =   0.86796875


--------
Iteration No: 37
c1 =   0.50000000    c2 =   0.50000000
velocity =

   -0.7852
   -0.5445
    0.8329

Particle 1 ::   pos(duty)=   0.16475625    fitness(Output Power)=   6.15089703
Particle 2 ::   pos(duty)=   0.43536444    fitness(Output Power)=  12.11999332
Particle 3 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295


Updated best Fitness Position =   0.86796875


--------
Iteration No: 38
c1 =   0.50000000    c2 =   0.50000000
velocity =

    2.7035
    1.8908
    0.0708

Particle 1 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
Particle 2 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
Particle 3 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295


Updated best Fitness Position =   0.86796875


--------
Iteration No: 39
```

```
c1 =   0.50000000    c2 =   0.50000000
velocity =

    0.5217
    0.5352
   -0.3103

Particle 1 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
Particle 2 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
Particle 3 ::   pos(duty)=   0.63967472    fitness(Output Power)=  28.98657571


Updated best Fitness Position =   0.86796875


--------
Iteration No: 40
c1 =   0.50000000    c2 =   0.50000000
velocity =

   -0.5692
   -0.1425
    1.0508

Particle 1 ::   pos(duty)=   0.38076250    fitness(Output Power)=   9.90255028
Particle 2 ::   pos(duty)=   0.80746017    fitness(Output Power)=  95.25910546
Particle 3 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295


Updated best Fitness Position =   0.86796875


--------
Iteration No: 41
c1 =   0.50000000    c2 =   0.50000000
velocity =

    1.7315
    0.2313
    0.1797

Particle 1 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
Particle 2 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
Particle 3 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295


Updated best Fitness Position =   0.86796875


--------
Iteration No: 42
c1 =   0.50000000    c2 =   0.50000000
velocity =

    0.0357
```

```
   -0.2945
   -0.2559

Particle 1 ::   pos(duty)=   0.98566718    fitness(Output Power)=   2.99749964
Particle 2 ::   pos(duty)=   0.65548025    fitness(Output Power)=  31.65212326
Particle 3 ::   pos(duty)=   0.69413547    fitness(Output Power)=  40.04134853


Updated best Fitness Position =   0.86796875


--------
Iteration No: 43
c1 =   0.50000000    c2 =   0.50000000
velocity =

   -0.9906
    0.9152
    0.8057

Particle 1 ::   pos(duty)=  -0.00491327    fitness(Output Power)=   3.86592501
Particle 2 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
Particle 3 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295


Updated best Fitness Position =   0.86796875


--------
Iteration No: 44
c1 =   0.50000000    c2 =   0.50000000
velocity =

    3.4492
    0.0474
    0.0571

Particle 1 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
Particle 2 ::   pos(duty)=   0.99743506    fitness(Output Power)=   0.05450000
Particle 3 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295


Updated best Fitness Position =   0.86796875


--------
Iteration No: 45
c1 =   0.50000000    c2 =   0.50000000
velocity =

    0.8945
   -0.6236
   -0.3171

Particle 1 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
```

```
Particle 2 ::   pos(duty)=   0.37382104    fitness(Output Power)=   9.90255028
Particle 3 ::   pos(duty)=   0.63286713    fitness(Output Power)=  28.31386375


Updated best Fitness Position =   0.86796875


--------
Iteration No: 46
c1 =   0.50000000    c2 =   0.50000000
velocity =

   -0.3828
    2.1589
    1.0814

Particle 1 ::   pos(duty)=   0.56718231    fitness(Output Power)=  20.74391235
Particle 2 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
Particle 3 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295


Updated best Fitness Position =   0.86796875


--------
Iteration No: 47
c1 =   0.50000000    c2 =   0.50000000
velocity =

    0.8926
    0.6693
    0.1950

Particle 1 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
Particle 2 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
Particle 3 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295


Updated best Fitness Position =   0.86796875


--------
Iteration No: 48
c1 =   0.50000000    c2 =   0.50000000
velocity =

   -0.3838
   -0.0755
   -0.2482

Particle 1 ::   pos(duty)=   0.56622262    fitness(Output Power)=  20.04003427
Particle 2 ::   pos(duty)=   0.87449851    fitness(Output Power)= 177.56337811
Particle 3 ::   pos(duty)=   0.70179401    fitness(Output Power)=  41.91922067
```

```
Updated best Fitness Position =   0.87449851


--------
Iteration No: 49
c1 =   0.50000000    c2 =   0.50000000
velocity =

    0.9132
   -0.0378
    0.7875

Particle 1 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
Particle 2 ::   pos(duty)=   0.83674776    fitness(Output Power)= 126.94585537
Particle 3 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295


Updated best Fitness Position =   0.87449851


--------
Iteration No: 50
c1 =   0.50000000    c2 =   0.50000000
velocity =

   -0.3571
    0.1699
    0.0644

Particle 1 ::   pos(duty)=   0.59286851    fitness(Output Power)=  22.83970002
Particle 2 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295
Particle 3 ::   pos(duty)=   0.95000000    fitness(Output Power)=  37.11431295


Updated best Fitness Position =   0.87449851


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>>
```