```
Initial Parameters...
R(load) = 500 ohms
c1 = 0.20
c2 = 0.20
r = 0.40
w = 0.10


---------
INITIAL Particle 1 ::   pos(duty)=   0.40000000    fitness(Output Power)=   10.64447425
INITIAL Particle 2 ::   pos(duty)=   0.60000000    fitness(Output Power)=   24.91191014
INITIAL Particle 3 ::   pos(duty)=   0.95000000    fitness(Output Power)=   37.05981391


===============================================
+++++++++++++++Start of Iterations+++++++++++++
===============================================
Iteration No: 1
velocity =

    0.0440
    0.0280
         0

Particle 1 ::   pos(duty)=   0.44400000    fitness(Output Power)=   17.91242412
Particle 2 ::   pos(duty)=   0.62800000    fitness(Output Power)=   31.65212326
Particle 3 ::   pos(duty)=   0.95000000    fitness(Output Power)=   37.05981391


Updated best Fitness Position =   0.95000000


---------
Iteration No: 2
velocity =

    0.0449
    0.0286
         0

Particle 1 ::   pos(duty)=   0.48888000    fitness(Output Power)=   17.91242412
Particle 2 ::   pos(duty)=   0.65656000    fitness(Output Power)=   31.65212326
Particle 3 ::   pos(duty)=   0.95000000    fitness(Output Power)=   37.05981391


Updated best Fitness Position =   0.95000000


---------
Iteration No: 3
velocity =

    0.0414
    0.0263
         0

Particle 1 ::   pos(duty)=   0.53025760    fitness(Output Power)=   17.91242412
```

```
Particle 2 ::    pos(duty)=   0.68289120    fitness(Output Power)= 38.14194079
Particle 3 ::    pos(duty)=   0.95000000    fitness(Output Power)= 37.05981391


Updated best Fitness Position =   0.68289120


--------
Iteration No: 4
velocity =

    0.0163
    0.0026
   -0.0214

Particle 1 ::    pos(duty)=   0.54660605    fitness(Output Power)= 24.91191014
Particle 2 ::    pos(duty)=   0.68552432    fitness(Output Power)= 38.14194079
Particle 3 ::    pos(duty)=   0.92863130    fitness(Output Power)= 75.20583849


Updated best Fitness Position =   0.92863130


--------
Iteration No: 5
velocity =

    0.0322
    0.0197
   -0.0021

Particle 1 ::    pos(duty)=   0.57880291    fitness(Output Power)= 24.91191014
Particle 2 ::    pos(duty)=   0.70523619    fitness(Output Power)= 44.38993712
Particle 3 ::    pos(duty)=   0.92649443    fitness(Output Power)= 80.10902754


Updated best Fitness Position =   0.92649443


--------
Iteration No: 6
velocity =

    0.0310
    0.0197
   -0.0002

Particle 1 ::    pos(duty)=   0.60983792    fitness(Output Power)= 24.91191014
Particle 2 ::    pos(duty)=   0.72490804    fitness(Output Power)= 50.40439394
Particle 3 ::    pos(duty)=   0.92628074    fitness(Output Power)= 80.65378471


Updated best Fitness Position =   0.92628074
```

Iteration No: 7
velocity =

    0.0284
    0.0181
   -0.0000

Particle 1 ::   pos(duty)=   0.63825685   fitness(Output Power)= 31.65212326
Particle 2 ::   pos(duty)=   0.74298504   fitness(Output Power)= 56.19331028
Particle 3 ::   pos(duty)=   0.92625937   fitness(Output Power)= 80.65378471

Updated best Fitness Position =   0.92625937

Iteration No: 8
velocity =

    0.0259
    0.0165
   -0.0000

Particle 1 ::   pos(duty)=   0.66413894   fitness(Output Power)= 38.14194079
Particle 2 ::   pos(duty)=   0.75945468   fitness(Output Power)= 67.12516157
Particle 3 ::   pos(duty)=   0.92625723   fitness(Output Power)= 80.65378471

Updated best Fitness Position =   0.92625723

Iteration No: 9
velocity =

    0.0236
    0.0150
   -0.0000

Particle 1 ::   pos(duty)=   0.68769661   fitness(Output Power)= 38.14194079
Particle 2 ::   pos(duty)=   0.77444585   fitness(Output Power)= 72.28276608
Particle 3 ::   pos(duty)=   0.92625702   fitness(Output Power)= 80.65378471

Updated best Fitness Position =   0.92625702

Iteration No: 10
velocity =

    0.0214
    0.0136
   -0.0000

```
Particle 1 ::    pos(duty)=   0.70913721    fitness(Output Power)=   44.38993712
Particle 2 ::    pos(duty)=   0.78808986    fitness(Output Power)=   82.01614752
Particle 3 ::    pos(duty)=   0.92625700    fitness(Output Power)=   80.65378471


Updated best Fitness Position =   0.78808986


--------
Iteration No: 11
velocity =

    0.0085
    0.0014
   -0.0111

Particle 1 ::    pos(duty)=   0.71759749    fitness(Output Power)=   50.40439394
Particle 2 ::    pos(duty)=   0.78945426    fitness(Output Power)=   82.01614752
Particle 3 ::    pos(duty)=   0.91520362    fitness(Output Power)=  106.23648145


Updated best Fitness Position =   0.91520362


--------
Iteration No: 12
velocity =

    0.0167
    0.0102
   -0.0011

Particle 1 ::    pos(duty)=   0.73425200    fitness(Output Power)=   56.19331028
Particle 2 ::    pos(duty)=   0.79965065    fitness(Output Power)=   91.01744190
Particle 3 ::    pos(duty)=   0.91409829    fitness(Output Power)=  108.95343853


Updated best Fitness Position =   0.91409829


--------
Iteration No: 13
velocity =

    0.0161
    0.0102
   -0.0001

Particle 1 ::    pos(duty)=   0.75030516    fitness(Output Power)=   61.76441209
Particle 2 ::    pos(duty)=   0.80982610    fitness(Output Power)=   99.33598333
Particle 3 ::    pos(duty)=   0.91398775    fitness(Output Power)=  109.49664260


Updated best Fitness Position =   0.91398775
```

```
--------
Iteration No: 14
velocity =

     0.0147
     0.0094
    -0.0000

Particle 1 ::    pos(duty)=   0.76500508    fitness(Output Power)=  67.12516157
Particle 2 ::    pos(duty)=   0.81917658    fitness(Output Power)= 107.01779235
Particle 3 ::    pos(duty)=   0.91397670    fitness(Output Power)= 109.49664260


Updated best Fitness Position =   0.91397670


--------
Iteration No: 15
velocity =

     0.0134
     0.0085
    -0.0000

Particle 1 ::    pos(duty)=   0.77839280    fitness(Output Power)=  77.24418689
Particle 2 ::    pos(duty)=   0.82769564    fitness(Output Power)= 117.43974535
Particle 3 ::    pos(duty)=   0.91397560    fitness(Output Power)= 109.49664260


Updated best Fitness Position =   0.82769564


--------
Iteration No: 16
velocity =

     0.0053
     0.0009
    -0.0069

Particle 1 ::    pos(duty)=   0.78367580    fitness(Output Power)=  77.24418689
Particle 2 ::    pos(duty)=   0.82854754    fitness(Output Power)= 117.43974535
Particle 3 ::    pos(duty)=   0.90707309    fitness(Output Power)= 127.36360601


Updated best Fitness Position =   0.90707309


--------
Iteration No: 17
velocity =

     0.0104
```

```
    0.0064
   -0.0007
```

Particle 1 ::   pos(duty)=   0.79407588   fitness(Output Power)= 86.60514184
Particle 2 ::   pos(duty)=   0.83491478   fitness(Output Power)= 126.65788382
Particle 3 ::   pos(duty)=   0.90638284   fitness(Output Power)= 129.51701439

Updated best Fitness Position =   0.90638284

Iteration No: 18
velocity =

```
    0.0100
    0.0064
   -0.0001
```

Particle 1 ::   pos(duty)=   0.80410045   fitness(Output Power)= 95.25910546
Particle 2 ::   pos(duty)=   0.84126894   fitness(Output Power)= 134.79195338
Particle 3 ::   pos(duty)=   0.90631381   fitness(Output Power)= 129.51701439

Updated best Fitness Position =   0.84126894

Iteration No: 19
velocity =

```
    0.0040
    0.0006
   -0.0052
```

Particle 1 ::   pos(duty)=   0.80807639   fitness(Output Power)= 99.33598333
Particle 2 ::   pos(duty)=   0.84190436   fitness(Output Power)= 134.79195338
Particle 3 ::   pos(duty)=   0.90110332   fitness(Output Power)= 143.90373652

Updated best Fitness Position =   0.90110332

Iteration No: 20
velocity =

```
    0.0078
    0.0048
   -0.0005
```

Particle 1 ::   pos(duty)=   0.81591613   fitness(Output Power)= 103.25372637
Particle 2 ::   pos(duty)=   0.84670382   fitness(Output Power)= 141.94982779
Particle 3 ::   pos(duty)=   0.90058227   fitness(Output Power)= 145.47829322

Updated best Fitness Position =   0.90058227

Iteration No: 21
velocity =

    0.0076
    0.0048
   -0.0001

Particle 1 ::   pos(duty)=   0.82347340   fitness(Output Power)= 114.10579781
Particle 2 ::   pos(duty)=   0.85149404   fitness(Output Power)= 148.22868244
Particle 3 ::   pos(duty)=   0.90053017   fitness(Output Power)= 145.47829322

Updated best Fitness Position =   0.85149404

Iteration No: 22
velocity =

    0.0030
    0.0005
   -0.0039

Particle 1 ::   pos(duty)=   0.82647078   fitness(Output Power)= 117.43974535
Particle 2 ::   pos(duty)=   0.85197306   fitness(Output Power)= 148.22868244
Particle 3 ::   pos(duty)=   0.89660207   fitness(Output Power)= 156.25543854

Updated best Fitness Position =   0.89660207

Iteration No: 23
velocity =

    0.0059
    0.0036
   -0.0004

Particle 1 ::   pos(duty)=   0.83238102   fitness(Output Power)= 123.71128026
Particle 2 ::   pos(duty)=   0.85559129   fitness(Output Power)= 153.71605220
Particle 3 ::   pos(duty)=   0.89620926   fitness(Output Power)= 157.25144454

Updated best Fitness Position =   0.89620926

Iteration No: 24
velocity =

```
    0.0057
    0.0036
   -0.0000
```

Particle 1 ::   pos(duty)=   0.83807830   fitness(Output Power)= 129.48413285
Particle 2 ::   pos(duty)=   0.85920255   fitness(Output Power)= 158.49078494
Particle 3 ::   pos(duty)=   0.89616997   fitness(Output Power)= 157.25144454

Updated best Fitness Position =   0.85920255

Iteration No: 25
velocity =

```
    0.0023
    0.0004
   -0.0030
```

Particle 1 ::   pos(duty)=   0.84033797   fitness(Output Power)= 132.19415921
Particle 2 ::   pos(duty)=   0.85956367   fitness(Output Power)= 159.93648403
Particle 3 ::   pos(duty)=   0.89320865   fitness(Output Power)= 164.45872547

Updated best Fitness Position =   0.89320865

Iteration No: 26
velocity =

```
    0.0045
    0.0027
   -0.0003
```

Particle 1 ::   pos(duty)=   0.84479359   fitness(Output Power)= 139.66612924
Particle 2 ::   pos(duty)=   0.86229138   fitness(Output Power)= 163.87027029
Particle 3 ::   pos(duty)=   0.89291252   fitness(Output Power)= 164.91881989

Updated best Fitness Position =   0.89291252

Iteration No: 27
velocity =

```
    0.0043
    0.0027
   -0.0000
```

Particle 1 ::   pos(duty)=   0.84908867   fitness(Output Power)= 144.13593671
Particle 2 ::   pos(duty)=   0.86501385   fitness(Output Power)= 167.24628517

Particle 3 ::   pos(duty)=   0.89288291   fitness(Output Power)= 165.37582175

Updated best Fitness Position =   0.86501385

Iteration No: 28
velocity =

    0.0017
    0.0003
   -0.0022

Particle 1 ::   pos(duty)=   0.85079219   fitness(Output Power)= 146.22780888
Particle 2 ::   pos(duty)=   0.86528609   fitness(Output Power)= 167.24628517
Particle 3 ::   pos(duty)=   0.89065042   fitness(Output Power)= 169.74903457

Updated best Fitness Position =   0.89065042

Iteration No: 29
velocity =

    0.0034
    0.0021
   -0.0002

Particle 1 ::   pos(duty)=   0.85415120   fitness(Output Power)= 151.96983563
Particle 2 ::   pos(duty)=   0.86734246   fitness(Output Power)= 170.12016625
Particle 3 ::   pos(duty)=   0.89042717   fitness(Output Power)= 170.16367659

Updated best Fitness Position =   0.89042717

Iteration No: 30
velocity =

    0.0032
    0.0021
   -0.0000

Particle 1 ::   pos(duty)=   0.85738918   fitness(Output Power)= 156.97385306
Particle 2 ::   pos(duty)=   0.86939488   fitness(Output Power)= 172.54202137
Particle 3 ::   pos(duty)=   0.89040485   fitness(Output Power)= 170.57358426

Updated best Fitness Position =   0.86939488

```
Iteration No: 31
velocity =

    0.0013
    0.0002
   -0.0017

Particle 1 ::   pos(duty)=   0.85867343    fitness(Output Power)= 158.49078494
Particle 2 ::   pos(duty)=   0.86960012    fitness(Output Power)= 172.54202137
Particle 3 ::   pos(duty)=   0.88872182    fitness(Output Power)= 173.29522852


Updated best Fitness Position =   0.88872182


--------
Iteration No: 32
velocity =

    0.0025
    0.0016
   -0.0002

Particle 1 ::   pos(duty)=   0.86120573    fitness(Output Power)= 161.31340061
Particle 2 ::   pos(duty)=   0.87115038    fitness(Output Power)= 174.55697645
Particle 3 ::   pos(duty)=   0.88855351    fitness(Output Power)= 173.66056932


Updated best Fitness Position =   0.87115038


--------
Iteration No: 33
velocity =

    0.0010
    0.0002
   -0.0014

Particle 1 ::   pos(duty)=   0.86225453    fitness(Output Power)= 163.87027029
Particle 2 ::   pos(duty)=   0.87130540    fitness(Output Power)= 174.55697645
Particle 3 ::   pos(duty)=   0.88714443    fitness(Output Power)= 175.70736453


Updated best Fitness Position =   0.88714443


--------
Iteration No: 34
velocity =

    0.0021
    0.0013
   -0.0001
```

```
Particle 1 ::    pos(duty)=  0.86435060    fitness(Output Power)= 166.17936770
Particle 2 ::    pos(duty)=  0.87258803    fitness(Output Power)= 176.20566917
Particle 3 ::    pos(duty)=  0.88700352    fitness(Output Power)= 176.02189553


Updated best Fitness Position =   0.87258803


--------
Iteration No: 35
velocity =

    0.0009
    0.0001
   -0.0012

Particle 1 ::    pos(duty)=  0.86521920    fitness(Output Power)= 167.24628517
Particle 2 ::    pos(duty)=  0.87271629    fitness(Output Power)= 176.20566917
Particle 3 ::    pos(duty)=  0.88583619    fitness(Output Power)= 177.46328365


Updated best Fitness Position =   0.88583619


--------
Iteration No: 36
velocity =

    0.0017
    0.0011
   -0.0001

Particle 1 ::    pos(duty)=  0.86695542    fitness(Output Power)= 170.12016625
Particle 2 ::    pos(duty)=  0.87377871    fitness(Output Power)= 177.11954390
Particle 3 ::    pos(duty)=  0.88571946    fitness(Output Power)= 177.46328365


Updated best Fitness Position =   0.88571946


--------
Iteration No: 37
velocity =

    0.0017
    0.0011
   -0.0000

Particle 1 ::    pos(duty)=  0.86863017    fitness(Output Power)= 171.78207902
Particle 2 ::    pos(duty)=  0.87484021    fitness(Output Power)= 177.89690255
Particle 3 ::    pos(duty)=  0.88570779    fitness(Output Power)= 177.46328365


Updated best Fitness Position =   0.87484021
```

```
--------
Iteration No: 38
velocity =

   1.0e-03 *

    0.6643
    0.1062
   -0.8706

Particle 1 ::   pos(duty)=   0.86929445    fitness(Output Power)= 172.54202137
Particle 2 ::   pos(duty)=   0.87494636    fitness(Output Power)= 178.23730632
Particle 3 ::   pos(duty)=   0.88483721    fitness(Output Power)= 178.21129434


Updated best Fitness Position =   0.87494636


--------
Iteration No: 39
velocity =

   1.0e-03 *

    0.5186
    0.0106
   -0.8783

Particle 1 ::   pos(duty)=   0.86981303    fitness(Output Power)= 173.25678950
Particle 2 ::   pos(duty)=   0.87495698    fitness(Output Power)= 178.23730632
Particle 3 ::   pos(duty)=   0.88395889    fitness(Output Power)= 179.05174434


Updated best Fitness Position =   0.88395889


--------
Iteration No: 40
velocity =

    0.0012
    0.0007
   -0.0001

Particle 1 ::   pos(duty)=   0.87099655    fitness(Output Power)= 174.55697645
Particle 2 ::   pos(duty)=   0.87567819    fitness(Output Power)= 178.54700287
Particle 3 ::   pos(duty)=   0.88387106    fitness(Output Power)= 179.05174434


Updated best Fitness Position =   0.88387106


--------
Iteration No: 41
```

```
velocity =

    0.0011
    0.0007
   -0.0000

Particle 1 ::   pos(duty)=   0.87214487   fitness(Output Power)= 175.69446321
Particle 2 ::   pos(duty)=   0.87640574   fitness(Output Power)= 179.07847733
Particle 3 ::   pos(duty)=   0.88386227   fitness(Output Power)= 179.05174434


Updated best Fitness Position =   0.87640574


--------
Iteration No: 42
velocity =

   1.0e-03 *

    0.4557
    0.0728
   -0.5974

Particle 1 ::   pos(duty)=   0.87260057   fitness(Output Power)= 176.20566917
Particle 2 ::   pos(duty)=   0.87647850   fitness(Output Power)= 179.07847733
Particle 3 ::   pos(duty)=   0.88326487   fitness(Output Power)= 179.39724479


Updated best Fitness Position =   0.88326487


--------
Iteration No: 43
velocity =

   1.0e-03 *

    0.8987
    0.5502
   -0.0597

Particle 1 ::   pos(duty)=   0.87349928   fitness(Output Power)= 177.11954390
Particle 2 ::   pos(duty)=   0.87702868   fitness(Output Power)= 179.30226694
Particle 3 ::   pos(duty)=   0.88320513   fitness(Output Power)= 179.39724479


Updated best Fitness Position =   0.88320513


--------
Iteration No: 44
velocity =

   1.0e-03 *
```

```
    0.8663
    0.5491
   -0.0060

Particle 1 ::   pos(duty)=   0.87436562    fitness(Output Power)= 177.52469395
Particle 2 ::   pos(duty)=   0.87757782    fitness(Output Power)= 179.67072353
Particle 3 ::   pos(duty)=   0.88319916    fitness(Output Power)= 179.39724479


Updated best Fitness Position =   0.87757782


--------
Iteration No: 45
velocity =

   1.0e-03 *

    0.3436
    0.0549
   -0.4503

Particle 1 ::   pos(duty)=   0.87470923    fitness(Output Power)= 177.89690255
Particle 2 ::   pos(duty)=   0.87763273    fitness(Output Power)= 179.67072353
Particle 3 ::   pos(duty)=   0.88274885    fitness(Output Power)= 179.68804741


Updated best Fitness Position =   0.88274885


--------
Iteration No: 46
velocity =

   1.0e-03 *

    0.6775
    0.4148
   -0.0450

Particle 1 ::   pos(duty)=   0.87538676    fitness(Output Power)= 178.23730632
Particle 2 ::   pos(duty)=   0.87804751    fitness(Output Power)= 179.81720176
Particle 3 ::   pos(duty)=   0.88270382    fitness(Output Power)= 179.68804741


Updated best Fitness Position =   0.87804751


--------
Iteration No: 47
velocity =

   1.0e-03 *
```

```
    0.2806
    0.0415
   -0.3770


Particle 1 ::    pos(duty)=   0.87566738    fitness(Output Power)= 178.54700287
Particle 2 ::    pos(duty)=   0.87808899    fitness(Output Power)= 179.81720176
Particle 3 ::    pos(duty)=   0.88232682    fitness(Output Power)= 179.81169973


Updated best Fitness Position =   0.87808899


--------
Iteration No: 48
velocity =

   1.0e-03 *

    0.2218
    0.0041
   -0.3767

Particle 1 ::    pos(duty)=   0.87588917    fitness(Output Power)= 178.82705206
Particle 2 ::    pos(duty)=   0.87809314    fitness(Output Power)= 179.81720176
Particle 3 ::    pos(duty)=   0.88195009    fitness(Output Power)= 180.01287527


Updated best Fitness Position =   0.88195009


--------
Iteration No: 49
velocity =

   1.0e-03 *

    0.5071
    0.3090
   -0.0377

Particle 1 ::    pos(duty)=   0.87639622    fitness(Output Power)= 179.07847733
Particle 2 ::    pos(duty)=   0.87840211    fitness(Output Power)= 179.93966906
Particle 3 ::    pos(duty)=   0.88191242    fitness(Output Power)= 180.01287527


Updated best Fitness Position =   0.88191242


--------
Iteration No: 50
velocity =

   1.0e-03 *

    0.4920
```

```
    0.3117
   -0.0038


Particle 1 ::   pos(duty)=   0.87688822    fitness(Output Power)= 179.30226694
Particle 2 ::   pos(duty)=   0.87871383    fitness(Output Power)= 180.03895504
Particle 3 ::   pos(duty)=   0.88190865    fitness(Output Power)= 180.01287527


Updated best Fitness Position =   0.87871383


--------
>>
```