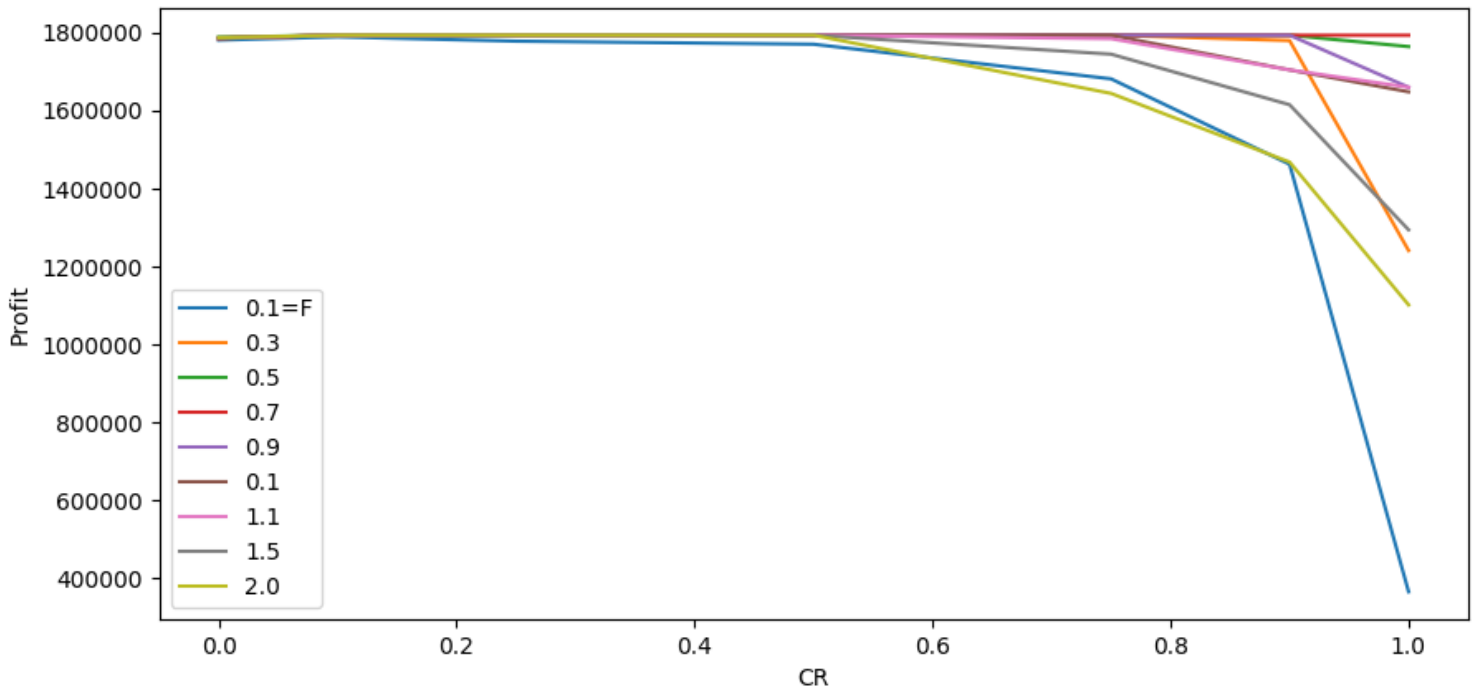
Implementation Details

- initialization with values in sensible ranges:
  - prices $\approx$ max prices
  - sells $\approx$ max demands
  - $\sum$ productions $\approx \sum$ max demands
- reset values below zero to values in donor.
- no observable difference between exchanging target and trial directly, or collecting trials first.
- (random F)
- every n steps replace worst performing agent with random initialization.

Optimization

Grid search over parameters F and CR in problem 1.



Overall we observe little variation in the final results over multiple repetitions.

Best Solutions Found

$F = 0.7 \quad CR = 0.25 \quad \text{population size} = 100$

P1					
e:	50,000.0	6,600,000.0	12,000,000.0	total production:	18,650,000.00
s:	1,063,930.2	11,694,537.5	5,891,532.3	total sells:	18,650,000.00
p:	0.3079	0.1953	0.1680	total profit:	**1,510,966.08**
P2					
e:	50,000.0	600,000.0	12,000,000.0	total production:	12,650,000.00
s:	1,138,916.5	14,192,963.0	8,216,054.1	total sells:	23,547,933.62
p:	0.2953	0.1815	0.1535	total profit:	**1,793,406.11**
P3:					
e	50,000.0	600,000.0	4,000,000.0	total production:	4,650,000.00
s	606,138.9	2,800,272.5	1,243,588.6	total sells:	4,650,000.00
p	0.3138	0.1990	0.0867	total profits:	**365,204.04**

Different Problem Representation

- Prizes and Demands are dependent on each other
- Demands should be satisfied
- Plant types can be ranked according to Cost/KWH-Efficiency
- Just prices needed as variables
- Prices $\rightarrow$ Demands $\rightarrow$ Fill up total demands according to Cost/KWH-Efficiency

Results 3 Parameters

P1	1514312.9433		
e:	0	11	3
s:	1063182	11669159	5867658
p:	0.30798185	0.1954207	0.16812104
P2	1818406.1108		
e:	0	0	0
s:	1138916	14192963	8216054
p:	0.29527056	0.18146991	0.15351838
P3	404041.5543		
e:	0	0	1
s:	594592	2692507	712900
p:	0.31835827	0.20380105	0.09259697

Table: $psize = 50, scaling = 0.8, crossover = 0.25$