

**Input:** cluster population

**Output:** new\_cluster population in sorted order with cluster-fittest on top

**Procedure:** intra-cluster evolution

1. number of crossover points = 4
2.  $p_c$  = crossover probability = 0.7
3. parents = select round( $p_c \times \text{clustersize}$ ) parents with uniform random distribution
4. non-parents = the rest of cluster population
5. children = recombination(parents)
6.  $p_m$  = mutation probability
7. children = mutate(children,  $p_m$ )
8. evaluate\_fitness([children+non-parents])
9. new\_cluster = select the fittest from [children and non-parents] equal to (input cluster size -1)