Tomas Bata University in Zlín
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# RELAY NODE PLACEMENT IN ENERGY-CONSTRAINED NETWORKS USING SOMA EVOLUTIONARY ALGORITHM

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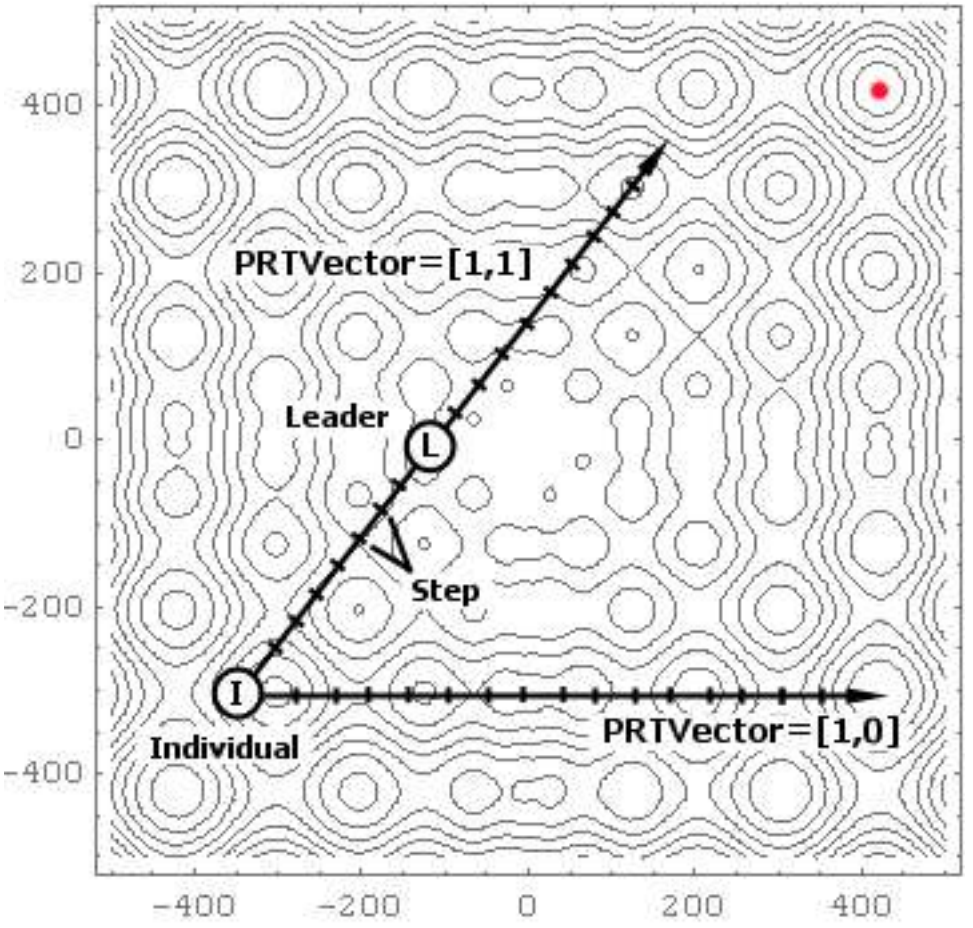
# SOMA principle

SOMA = Self-Organizing Migration Algorithm

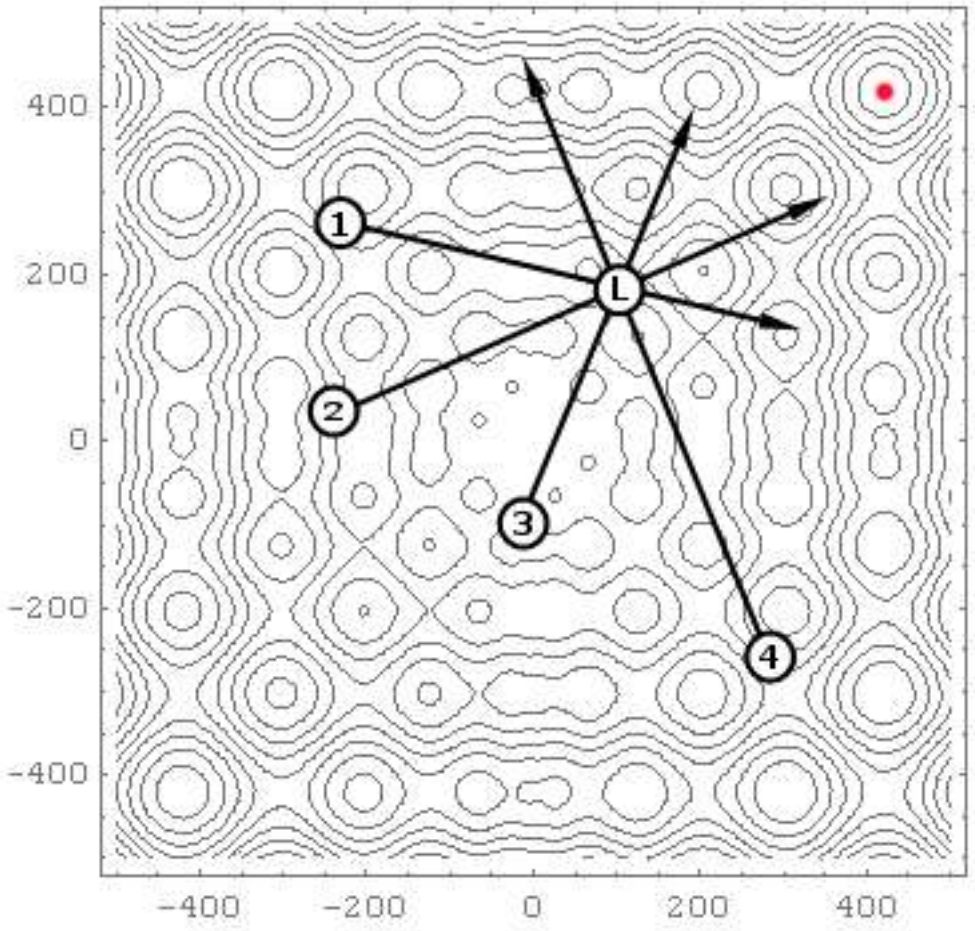
| | Individual 1 | Individual 2 | .... | Individual popSize |
|---|---|---|---|---|
| costValue | **-128.32** | **256.01** | .... | **2.48** |
| Parameter 1 | 0.3456 | 0.9364 | .... | 0.8763 |
| Parameter 2 | 0.7682 | 0.1252 | .... | 0.6451 |
| Parameter 3 | 0.7432 | 0.9273 | .... | 0.5931 |
| .... | .... | .... | .... | .... |
| Parameter Dim | 0.8712 | 0.8761 | .... | 0.7351 |

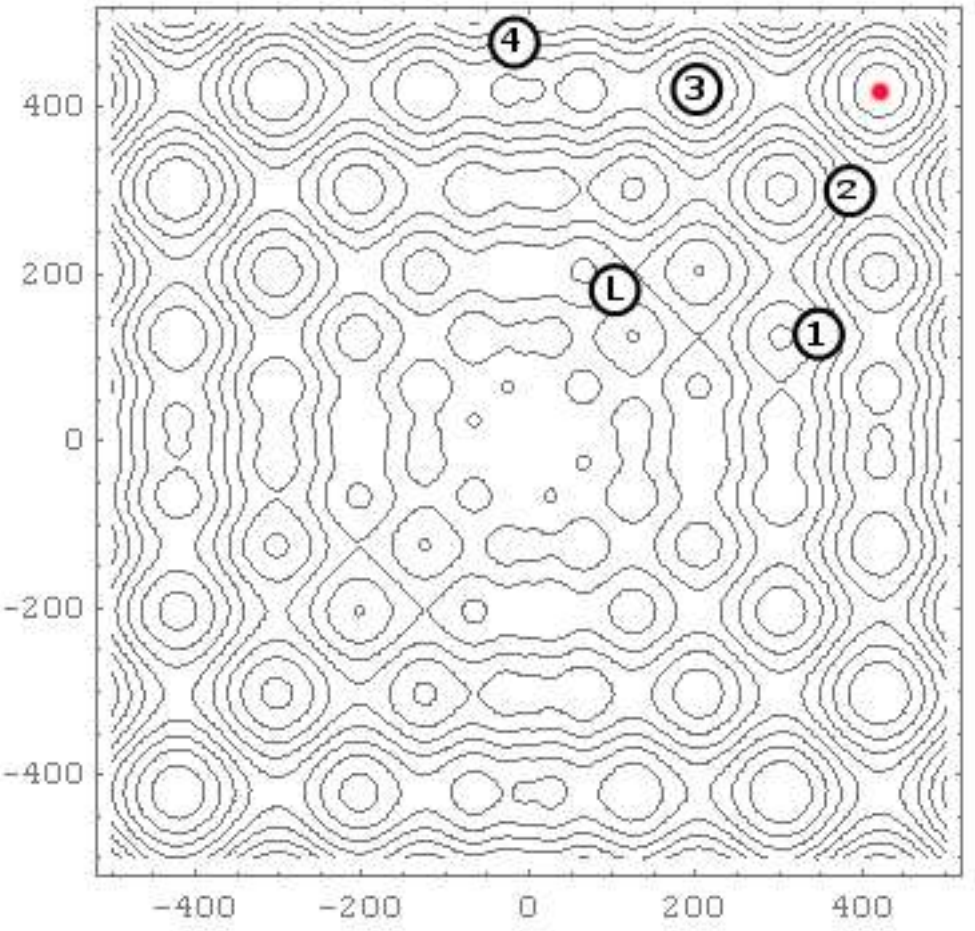
| Parameter name | Recommended range | Parameter type |
|---|---|---|
| PopSize | < 10, * > | Control |
| Dim | Given by problem | Control |
| PathLength | < 1.1, 3 > | Control |
| Step | < 0.11, PathLength > | Control |
| PRT | < 0,1 > | Control |
| Migrations | < 10, * > | Termination |
| MinDiv | < * > | Termination |

* - value is determined by user

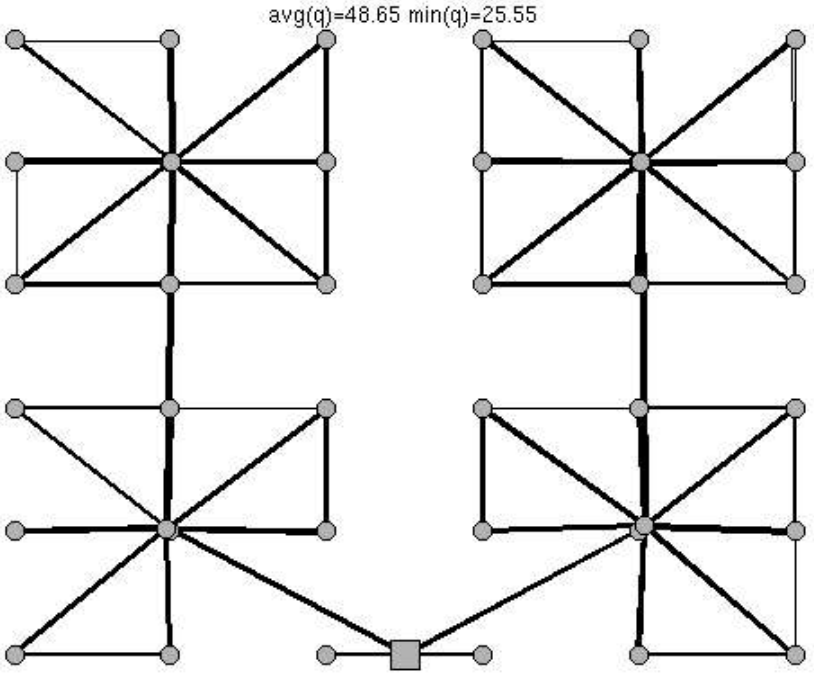


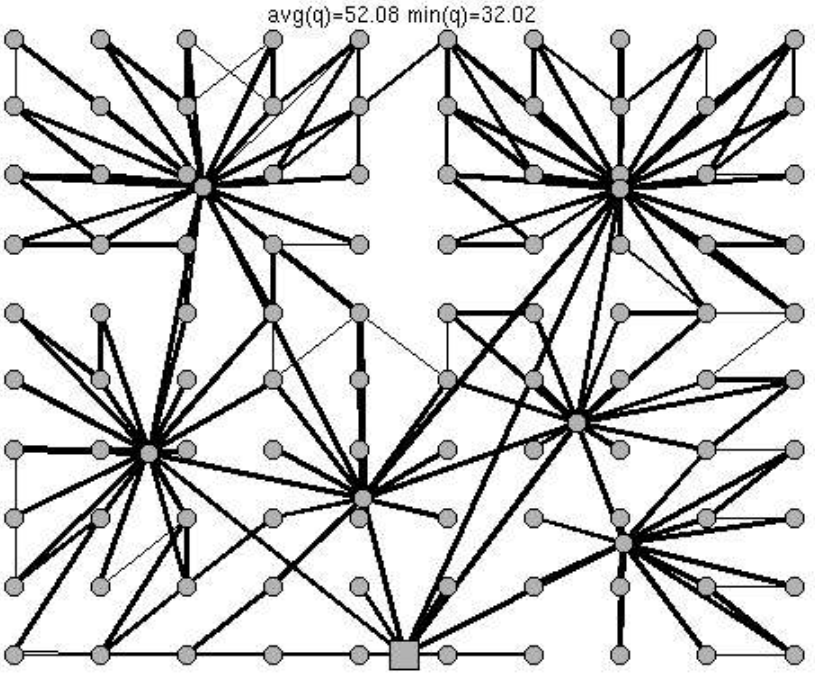
# SOMA principle



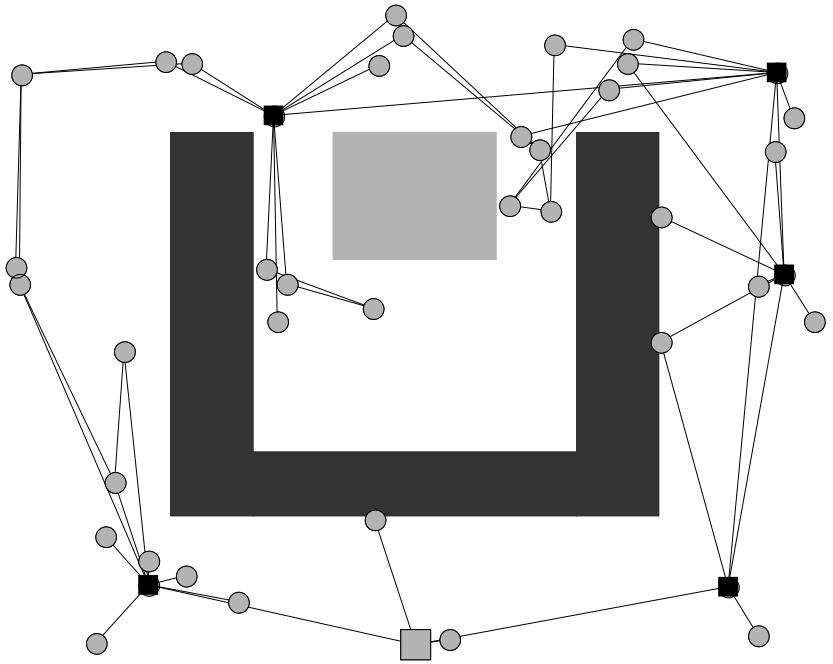
# Relay node placement



# Relay node placement

5 relay nodes



10 relay nodes