Optimal Sensor Layout using Multi-Objective Metaheuristic

Miroslav Shindarov,
PhD Student at IICT-BAS

Wireless Sensor Networks (WSN) allows the monitoring of wide and remote areas. A critical issue is the coverage of the monitoring region. Other applications demand an increased lifetime of the network. Both criteria are fundamental and should be taken in to consideration when the WSN is deployed. The complexity of the problem is high, therefore the most appropriate approach to solve it is metaheuristics. In this paper the full coverage of the area is treated as a constrain. The objectives which are optimized are minimal number of sensors and energy (lifetime) of the network. We apply multi-objective Ant Colony Optimization to solve this important telecommunication problem.