

Imitation of honeybee aggregation with collective behavior of swarm robots

ABSTRACT

This paper analyzes the collective behaviors of swarm robots that play role in the aggregation scenario. Honeybee aggregation is an inspired behavior of young honeybees which tend to aggregate around an optimal zone. This aggregation is implemented based on variation of parameters values. In the second phase, two modifications on original honeybee aggregation namely dynamic velocity and comparative waiting time are proposed. Results of the performed experiments showed the significant differences in collective behavior of the swarm system for different algorithms.

Keyword: Swarm robotics; Honeybee aggregation; Collective behavior; Swarm intelligence