Abstract

The Artificial Bee Colony (ABC) algorithm is a swarm intelligence based algorithm, which simulate the foraging behavior of honey bee colonies. It has been widely applied to solve the real-world problem. However, ABC has good exploration but poor exploitation abilities, and its convergence speed is also an issue in some cases. In order to overcome these issues, this paper presents a new metaheuristic algorithm called Quantum Artificial Bee Colony (QABC) algorithm for global optimization problems inspired by quantum physics concepts. Simulations are conducted on a suite of unimodal/multimodal continuous benchmark functions. The results demonstrate the good performance of the QABC algorithm in solving complex numerical optimization problems when compared with other popular algorithms.
Quantum Artificial Bee Colony Algorithm for Numerical Function Optimization,

- D. Karaboga, &quot;An Idea based on Honey Bee Swarm for Numerical Optimization,&quot; Technical Report, Erciyes University, Engineering Faculty, Computer Engineering Department, pp. 1-10, 2005.

**Index Terms**

Computer Science

Artificial Intelligence

**Keywords**
Artificial bee colony algorithm  Swarm intelligence  Quantum physics  Benchmark functions.