

*Abstract*—Heuristic optimization techniques have become very popular techniques and have widespread usage areas. Since they do not include mathematical terms, heuristic methods have been carried out on many fields by researchers. Main purpose of these techniques is to achieve good performance on problem of interest. One of these techniques is Bat Algorithm (BA). BA is an optimization algorithm based on echolocation characteristic of bats and developed by mimics of bats' foraging behavior. In this study, exploration and exploitation mechanisms of BA are improved by three modifications. Performance of proposed and standard version of algorithm is compared on ten basic benchmark test problems. Results indicate that proposed version is better than standard version in terms of solution quality.

*Index Terms*—Bat algorithm, continuous optimization, exploration and exploitation, heuristics.