

Vector Evaluated Gravitational Search Algorithm (VEGSA) for multi-objective optimization problems

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ABSTRACT

This paper presents a novel algorithm, which is based on Gravitational Search Algorithm (GSA), for multiobjective optimization problems. The proposed algorithm, which is called Vector Evaluated Gravitational Search Algorithm (VEGSA), uses a number of populations of particles. In particular, a population of particles corresponds to one objective function to be minimized or maximized. Simultaneous minimization or maximization of every objective function is realized by exchanging a variable between populations. Two versions of VEGSA algorithm are presented in this study. Convex and non-convex test functions on biobjective optimization problems are used to evaluate the effectiveness of the proposed VEGSA.

KEYWORDS:

multi-objective optimization; VEGSA

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