

A new real coded genetic algorithm crossover: Rayleigh crossover

ABSTRACT

This paper presents a comparison in the performance analysis between a newly developed crossover operator called Rayleigh Crossover (RX) and an existing crossover operator called Laplace Crossover (LX). Coherent to the previously defined Scaled Truncated Pareto Mutation (STPM) operator to form two (2) generational RCGAs called RX-STPM and LX-STPM, both crossovers are utilized. A set of ten (10) benchmark global optimization test problems is used to investigate the reliability, efficiency, accuracy and quality of solutions of both optimization algorithms. Based on computational results, the RX-STPM has yield a significant better performance as compared to LX-STPM.

Keyword: Genetic algorithms; Mutation operator; Crossover operator; Global optimization