

Inverted Generational Distance Bat Algorithm for Many-Objective Optimization Problems
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ABSTRACT

Evolutionary Algorithms (EAs) can be used to solve extremely large-scale Many-Objective Optimization Problems (MOPs/I). Multi-Objective BAT Algorithm based on Inverted Generational Distance MOBAT / IGD, a dominance-decomposition bat algorithm, solves this problem. Due to the Tchebycheff Strategy leader selection process, addressing the issues concurrently inside the BAT foundation may result in rapid convergence. In this paper decomposing the MOP as a Tchebycheff Approach set simplifies it. Dominance allows leaders to scan less densely populated areas, avoiding local optima and producing a more diverse estimated Pareto front as well creating the executives archive. MOBAT/IGD was evaluated to various decomposition-based development methods utilizing 35 standard MOPs. MATLAB produced all results (R2017b).

Keywords— Bat Algorithm; Inverted Generational Distance; Many-Objective Optimization Problems.

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