

# DYNAMIC MULTI-OBJECTIVE OPTIMIZATION

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Most real-world optimization problems have more than one objective, with at least two objectives that are in conflict with one another. The conflicting objectives of the optimization problem lead to an optimization problem where a single solution does not exist, as is the case with single-objective optimization problems (SOOPs). Instead of a single solution, a set of optimal trade-off solutions exists, referred to as the Pareto-optimal front (POF) or Pareto front. This kind of optimization problems are referred to as multi-objective optimization problems (MOOPs).

In many real-world situations the environment does not remain static, but is dynamic and changes over time. However, in recent years most research was focussed on either static MOOPs or dynamic SOOPs. When solving dynamic multi-objective optimization problems (DMOOPs) an algorithm has to track the changing POF over time, while finding solutions as close as possible to the true POF and maintaining a diverse set of solutions. Some of the major challenges in the field of dynamic multi-objective optimization (DMOO) are a lack of a standard set of benchmark functions, a lack of standard performance measures, issues with performance measures currently being used for DMOO and a lack of a comprehensive analysis of existing algorithms applied to DMOO.

Therefore, this special session aims to highlight the latest developments in dynamic multi-objective optimization (DMOO) in order to bring together researchers from both academia and industry to address the above mentioned challenges and to explore future research directions for the field of DMOO.