Speech Title:
Dynamic Multi-objective Optimization: Challenges, Applications and Opportunities

Abstract:
Most optimization problems in real-life have more than one objective, with at least two objectives in conflict with one another and at least one objective that changes over time. These kinds of optimization problems are referred to as dynamic multi-objective optimization (DMOO) problems.

Most research in multi-objective optimization has been conducted on static problems and most research on dynamic problems has been conducted on single-objective optimization. The goal of a DMOO algorithm (DMOA) is to find an optimal set of solutions that is: as close as possible to the true set of solutions, and a diverse set of solutions. However, in addition to these goals a DMOA has to track the changing set of optimal solutions over time.

This talk will introduce the participants to the field of DMOO, challenges in the field that are not yet addressed, such as incorporating a decision maker's preference in DMOO and visualizing the behaviour of DMOAs; real-world applications; and emerging research fields that provide interesting research opportunities.