

From MOCO to MOLP (and back): A Journey in Multiobjective Optimisation

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5. Juli 2011

Zusammenfassung

In this talk I want to take you on journey through some of my work in multiobjective optimisation. I will first discuss the two phase method, presenting its general outline and some important considerations that make it very successful in solving bi-objective combinatorial optimisation problems. I will then present a generalisation to three (and more) objectives. Secondly, I will talk about scalarisation methods applied to multiobjective combinatorial problems, and a scalarisation technique that generalises both the weighted sum and e-constraint methods thereby overcoming the drawbacks of both, while remaining useful in practice. The second half of the talk will be devoted to multiobjective linear programming and recent work on objective space method. I will present a modified version of Benson's algorithm, the concept of geometric duality and a new dual version of the algorithm, and its interpretation in terms of the original multiobjective linear programme.