

## IRIDIA BiB<sub>T</sub><sub>E</sub>X Repository (April 16, 2021)

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*Annotation:* The purpose of this study was to systematically evaluate a number of multiobjective programming concepts relative to reflection of utility, assurance of nondominated solutions and practicality for larger problems using conventional software. In the problem used, the nonlinear simulated DM utility function applied resulted in a nonextreme point solution. Very often, the preferred solution could end up being an extreme point solution, in which case the techniques relying upon LP concepts would work as well if not better than utilizing constrained objective attainments. The point is that there is no reason to expect linear or near linear utility.

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*Keywords:* artificial DMs.

*Annotation:* In this research, we proposed to build an automated framework for testing interactive multiobjective optimization methods, without utilizing a value function to represent the DM’s preferences. This was achieved by replacing the human DM with an artificial DM constructed from two distinct parts: the steady part and the current context. With the steady part the artificial DM tries to maintain the search towards its preferences, while at the same time the current context allows changing the direction as well as ending the solution process prematurely, mimicking actions of a human DM.

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Annotation: Proof of Theorem 3.1 is incorrect.

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