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Estimating Pareto Optimal Solutions from Preference Profiles

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Abstract

We consider the problem of estimating Pareto optimal sets of alternatives in a two person, multiple criteria discrete alternative context. Using a procedure that was developed to estimate individual preference orders from partial preference profiles, we illustrate how the Pareto set can be estimated interactively. We present a preference representation structure for the group that is derived from the known and estimated individual preferences, and discuss measures of accuracy of the estimated Pareto set. Computational results that illustrate the effectiveness of the proposed procedure in estimating the Pareto set accurately while minimizing the preference requirements of the individuals are also provided.