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## Models of Multi-criteria Optimization with Quality Criteria

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We consider mathematical models of multi-criteria optimization with quality criteria. The main problem is a construction of preference relations on the set of alternatives and an investigation of its mathematical properties. Two methods for contraction of Pareto-optimal set are proposed. The first method is based on introduction of a partial order relation on the set of criteria and the second leans selection of the most important groups of criteria.

*Key words:* model of multi-criteria optimization, preference relation, Pareto-optimality, winning coalition of criteria.

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