

EVALUATION OF OPTIMIZATION METHODS FOR MACHINING ECONOMICS MODELS

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Summary

In machining operations it is desirable to operate under optimal machining conditions. The optimal cutting conditions are obtained by solving machining optimization models. The formulated machining models are non-convex non-linear programs of complex nature. This paper compares the performances and the utilities of six algorithms to identify the most suitable one(s) for solving the machining models. The algorithms are evaluated empirically with respect to their reliability, precision, convergence, sensitivity to input vector and their preparational effort. The Generalized Reduced Gradient method (GRG) implemented as GINO is found to be the most suitable for solving machining optimization models.

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