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## Study on the Configuration Guideline of Objective function for Acceleration/Deceleration Parameter Optimization using a Machine tool simulator

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### Abstract

Optimization studies of feed drive system parameters of machine tools are gaining attention. Majority of the studies use the weighted sum of several evaluation indices regarding machine behavior as the objective function. However, there is no clear guideline for designing those weights, which are currently configured empirically. To address this problem, this study has optimized acceleration/deceleration parameters of a milling table with various weight configurations by using a machine tool simulator. Optimized parameters showed clear relationships between the weights related to the magnitude of acceleration and the positional accuracy. That enables weight configuration design to meet various users' needs.

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