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Investigation on Influences of Initial Residual Stress on Thin-walled Part Machining Deformation Based on a Semi-Analytical Model

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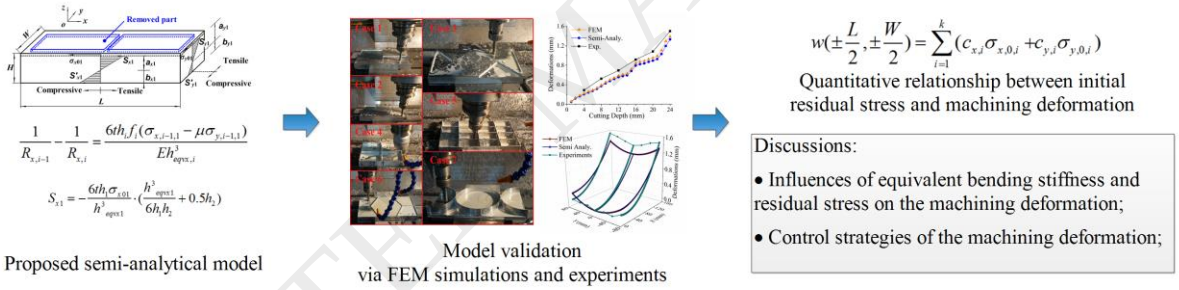
Graphical Abstract



Abstract

The manufacturing accuracy of the thin-walled parts is significantly affected by the residual stress in the blank and the resulting machining deformation. In recent years, the prediction and control of the machining deformation have received extensive attentions. A semi-analytical machining deformation prediction model is proposed for the thin-walled parts in terms of the equivalent bending stiffness calculated by finite element method (FEM) simulation and theory

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