عنوان مقاله:

Finite Element Prediction on the Machining Stability of Boring Machine with Experimental Verification

محل انتشار:

مجله بین المللی طراحی پیشرفته و تکنولوژی ساخت, دوره 8, شماره 1 (سال: 1394)

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خلاصه مقاله:

The occurrence of chatter vibrations in boring operation has a great influence in improving workpiece dimensional accuracy, surface quality and production efficiency. In this paper instability analysis of machining process is presented by dynamic model of boring machine. This model, which consists of machine tool’s structure, is provided by finite element method and ANSYS software. The model is evaluated and corrected with experimental results by modal testing on boring machine in which the natural frequencies and the shape of vibration modes are analyzed. The natural frequencies of this modal testing are extracted through Pulse Labshop and ME’scope modal analysis software.Finally, the stability lobes obtained from this model are plotted and compared with experimental results

کلمات کلیدی:

Boring Machine Tool, chatter, Modal Analysis, Stability Lobe