

Surface Reconstruction and Tool Path Strategies for Incremental Sheet Metal Forming

Ravi Shankar

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Abstract

In spite of the extensive efforts that have been made in the field of virtual process optimization technology, the production of prototype parts is still a necessity. Therefore, it becomes imperative to explore new flexible manufacturing technologies. One such technology, which allows the production of complex parts by drastically reducing costs in tooling and machinery, is Incremental Sheet Metal Forming (ISMF). The aim of the presented dissertation is to optimize the ISMF process through surface reconstruction of the working surface, after considering thickness dependency of the so-called sine law and process-induced disturbances. The ultimate focus is to gain knowledge to realize a fully kinematical Incremental Sheet Metal Forming process.

