عنوان مقاله:

Prediction of the Blank Size in Sheet Metal Forming with Inverse Finite Element Method

محل انتشار:

دومین کنفرانس بین المللی و هشتمین کنفرانس ملی مهندسی ساخت و تولید (سال: 1386)

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خلاصه مقاله:

In this paper, a linear Inverse Finite Element Method (IFEM) has been developed for prediction of the optimum blank in sheet metal forming. The base of the formulations is an unfolding process which converts the three dimensional space into two dimensional coordinates on the flat sheet. The concept and basic formulations of this approach have been explained. Two solution methods, Direct and Newton–Raphson Methods have been examined and compared in solving the equilibrium equations. To evaluate the developed algorithm, an S rail part was selected in prediction of the optimum blank and thickness distribution. The results were compared with the results predicted by forward incremental approach in LS-DYNA commercial FEM software.

کلمات کلیدی:

Inverse finite element method, Sheet metal forming; Blank optimization