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## Research on the optimization mechanism of loading path for hydroforming process

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In this paper, the hydroforming process of X tube has been simulated and analysed by the dynamic explicit finite element analysis software DYNAFORM, the variation law of thickness distribution, size change, stress and strain of X tube under different loading paths has been researched. The control algorithm of adaptive simulation and BP neural network based on the genetic algorithm has been developed, and the main factors which have influence on the forming property are optimized by this intelligent control strategy, including the matching relationship among axial feed, internal pressure and back displacement. The internal mechanism of the loading path which has influence on the hydroforming properties of X tube has been found out, for providing the theoretical basis and the optimization evaluation criterion of the optimization for loading path.

## **Biography**

Zong An Luo has completed his PhD in 2006. He worked as a Teacher at the Northeastern University and now is working as a Professor at the same university. He has published more than 40 papers in reputed journals.

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