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A Numerical Study on Chain-Die Forming of the AHSS U-Channel and Contrast with Roll Forming

Yaguang Li , Yong Sun , Hua Xiao , Hyuk Jong Bong , Lei Shi , Shuhui Li , Dayong Li , Shichao Ding , R.H. Wagoner

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Highlights

- The performance of AHSS in chain-die forming is investigated by experiment and simulation.
- The hardening model to describe the Bauschinger effect of the AHSS is established and implemented into the finite element model of chain-die forming process.
- The evolutions of longitudinal strain and springback in the chain-die forming of the U-channel are investigated.
- A systematic comparison between chain-die forming and roll forming of the U-channel are performed in terms of deformation mechanism, transitional surface, strain development and springback, etc.

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