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An improved study on Gardiner's work based on elastoplastic analysis considering deformation history

C. Huang , Z.Q. Xiang , Y.S. Mao , S.X. Zhang

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Highlights

- The deformation history of metal material bend-forming is divided into three stages, and the elastoplastic analysis considering deformation history is investigated.
- The springback rule of metal materials with uniform rectangular cross-section under pure bending is obtained.
- An improved springback prediction formula with hardening component is proposed.
- A mechanical demonstration for Gardiner's work is implemented.
- The improved solution proposed can ensure higher prediction precision than Gardiner's solution.

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