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On shear failure behaviors of an armor steel over a large range of strain rates

Z ejian Xu , Yu Liu , Zhongyue Sun , Hongzhi Hu ,
F englei Huang

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Highlights

- Shear failure properties of an armor steel are obtained from 10^{-3} s^{-1} to $4.5 \times 10^3 \text{ s}^{-1}$.
- A shear dominated state is obtained with low stress triaxiality and Lode angle parameter.
- Distinct tendencies of failure strain and failure stress with strain rates are found.
- A transformation is observed in the failure micromechanism with increasing strain rates.
- The integrity and consistency of experimental data are obtained in a large strain rate range.

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