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Predicting the Rate-dependent Loading Paths to Fracture in Advanced High Strength Steels Using an Extended Mechanical Threshold Model

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Highlights

- Formulated a new rate- and temperature dependent plasticity model
- Performed low, intermediate and high strain rate experiments at different stress states
- Employed a hybrid experimental-numerical method to determine the loading paths to fracture
- Observed a significant increase in ductility in the high strain rate experiments

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