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Effect of the Lode parameter in predicting shear cracking of 2024-T351 aluminum alloy Taylor rods

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Highlights

- A modified version of Johnson-Cook strength model was constructed and calibrated.
- The Johnson-Cook and a Lode dependent fracture criterion were calibrated using a hybrid experimental-numerical method.
- Taylor impact tests were conducted and shear cracking was identified.
- FE simulations by using the Lode dependent fracture criterion reasonably predicted the shear cracking
- FE simulations by using the Johnson-Cook fracture criterion failed to predict any fracture in the rod

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