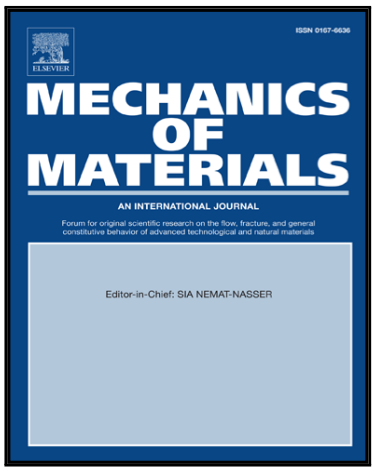

Predicting Ductile Fracture in Ferrous Materials during Tensile Tests Using an Ellipsoidal Void Model

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Highlights

- A microscopic ellipsoidal void model was used to predict macroscopic ductile fracture.
- Simulated effects of notch-root curvature and prestrain agree with experimental results.
- An assumption of plane stress for the cases of sheets is inappropriate.
- Void nucleation increasingly depends on stress triaxiality with increasing carbon content.
- Void shapes calculated using a RVE do not significantly affect simulation results.