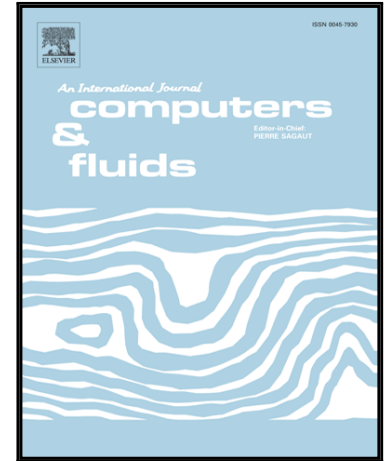


## Accepted Manuscript

A high-order cell-centered Lagrangian scheme for one-dimensional elastic-plastic problems

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**Highlights**

- Develop a two-rarefaction Riemann solver (TRRSE) for 1D elastic-plastic flows.
- Propose high-order cell-centered Lagrangian schemes for 1D elastic-plastic problems.
- Show how to limit the time step to keep our high-order scheme positivity-preserving.
- Our 3rd-order scheme seems to be convergent, stable and essentially non-oscillatory.
- TRRSE performs better than the node Riemann solvers in resolving rarefaction waves.

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