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Variational phase-field formulation of non-linear ductile fracture

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Highlights

- We present a higher order phase-field model to non-linear ductile fracture.
- A novel multiplicative triple split of the deformation gradient is introduced.
- An exponential update scheme for the return map in the time discrete setting is applied.
- To account for ductile fracture a novel model of the critical fracture energy is introduced.
- The approach is able to account for the entire range of ductile fracture within non-linear elastoplasticity.

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