

Large scale phase field model of fracture and cutting of soft tissues

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ABSTRACT

The phase field method has proven to be an important tool in computational mechanics in that it is able to deal naturally with crack nucleation and branching [1]. In this contribution, we demonstrate a large scale phase field model of fracture and cutting of soft tissues undergoing non-linear deformations with a material law defined by a hyperelastic energy density functional. We will also provide some initial thoughts on the how the effect of a porous medium can be incorporated into the phase field model. We implement this work using the FEniCS project and PETSc software packages [2, 3].

References

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