

Finite elasticity

Miehe, C., 1994. Aspects of the formulation and finite element implementation of large strain isotropic elasticity. *International Journal for Numerical Methods in Engineering*, 37(12), pp.1981-2004.

Govindjee, S. and Mihalic, P.A., 1998. Computational methods for inverse deformations in quasi-incompressible finite elasticity. *International journal for numerical methods in engineering*, 43(5), pp.821-838.

Bonet, J., Gil, A.J. and Ortigosa, R., 2015. A computational framework for polyconvex large strain elasticity. *Computer Methods in Applied Mechanics and Engineering*, 283, pp.1061-1094.

Incompressibility

Simo, J.C., Taylor, R.L. and Pister, K., 1985. Variational and projection methods for the volume constraint in finite deformation elasto-plasticity. *Computer methods in applied mechanics and engineering*, 51(1-3), pp.177-208.

de Souza Neto, E.A., Perić, D., Dutko, M. and Owen, D., 1996. Design of simple low order finite elements for large strain analysis of nearly incompressible solids. *International Journal of Solids and Structures*, 33(20-22), pp.3277-3296.

Dynamics

Hilber, H.M., Hughes, T.J. and Taylor, R.L., 1977. Improved numerical dissipation for time integration algorithms in structural dynamics. *Earthquake Engineering & Structural Dynamics*, 5(3), pp.283-292.

Simo, J.C. and Tarnow, N., 1992. The discrete energy-momentum method. Conserving algorithms for nonlinear elastodynamics. *Zeitschrift für angewandte Mathematik und Physik ZAMP*, 43, pp.757-792.

Gonzalez, O., 2000. Exact energy and momentum conserving algorithms for general models in nonlinear elasticity. *Computer Methods in Applied Mechanics and Engineering*, 190(13-14), pp.1763-1783.

Viscoelasticity

Simo, J.C., 1987. On a fully three-dimensional finite-strain viscoelastic damage model: formulation and computational aspects. *Computer methods in applied mechanics and engineering*, 60(2), pp.153-173.

Reese, S. and Govindjee, S., 1998. A theory of finite viscoelasticity and numerical aspects. *International journal of solids and structures*, 35(26-27), pp.3455-3482.

Holzapfel, G.A. and Gasser, T.C., 2001. A viscoelastic model for fiber-reinforced composites at finite strains: Continuum basis, computational aspects and applications. *Computer methods in applied mechanics and engineering*, 190(34), pp.4379-4403.

Latorre, M. and Montáns, F.J., 2015. Anisotropic finite strain viscoelasticity based on the Sidoroff multiplicative decomposition and logarithmic strains. *Computational Mechanics*, 56, pp.503-531.

Holzapfel, G.A. and Simo, J.C., 1996. A new viscoelastic constitutive model for continuous media at finite thermomechanical changes. *International Journal of Solids and Structures*, 33(20-22), pp.3019-3034.

Elastoplasticity

Simo, J.C. and Taylor, R.L., 1985. Consistent tangent operators for rate-independent elastoplasticity. *Computer methods in applied mechanics and engineering*, 48(1), pp.101-118.

Contact

Simo, J.C. and Ortiz, M., 1985. A unified approach to finite deformation elastoplastic analysis based on the use of hyperelastic constitutive equations. *Computer methods in applied mechanics and engineering*, 49(2), pp.221-245.

Simo, J.C. and Miehe, C., 1992. Associative coupled thermoplasticity at finite strains: Formulation, numerical analysis and implementation. *Computer Methods in Applied Mechanics and Engineering*, 98(1), pp.41-104.

Nagtegaal, J.C., Parks, D.M. and Rice, J., 1974. On numerically accurate finite element solutions in the fully plastic range. *Computer methods in applied mechanics and engineering*, 4(2), pp.153-177.

Contact

Simo, J.C., Wriggers, P. and Taylor, R.L., 1985. A perturbed Lagrangian formulation for the finite element solution of contact problems. *Computer methods in applied mechanics and engineering*, 50(2), pp.163-180.

Wriggers, P., Van, T.V. and Stein, E., 1990. Finite element formulation of large deformation impact-contact problems with friction. *Computers & Structures*, 37(3), pp.319-331.

De Lorenzis, L., Temizer, İ., Wriggers, P. and Zavarise, G., 2011. A large deformation frictional contact formulation using NURBS-based isogeometric analysis. *International Journal for Numerical Methods in Engineering*, 87(13), pp.1278-1300.

Alart, P. and Curnier, A., 1991. A mixed formulation for frictional contact problems prone to Newton like solution methods. *Computer methods in applied mechanics and engineering*, 92(3), pp.353-375.

Hughes, T.J., Taylor, R.L., Sackman, J.L., Curnier, A. and Kanoknukulchai, W., 1976. A finite element method for a class of contact-impact problems. *Computer methods in applied mechanics and engineering*, 8(3), pp.249-276.

Laursen, T.A. and Chawla, V., 1997. Design of energy conserving algorithms for frictionless dynamic contact problems. *International Journal for Numerical Methods in Engineering*, 40(5), pp.863-886.

Fluid mechanics and fluid-structure interaction

Hughes, T.J., Franca, L.P. and Balestra, M., 1986. A new finite element formulation for computational fluid dynamics: V. Circumventing the Babuška-Brezzi condition: A stable Petrov-Galerkin formulation of the Stokes problem accommodating equal-order interpolations. *Computer Methods in Applied Mechanics and Engineering*, 59(1), pp.85-99.

Brooks, A.N. and Hughes, T.J., 1982. Streamline upwind/Petrov-Galerkin formulations for convection dominated flows with particular emphasis on the incompressible Navier-Stokes equations. *Computer methods in applied mechanics and engineering*, 32(1-3), pp.199-259.

Hughes, Thomas JR, Wing Kam Liu, and Thomas K. Zimmermann. "Lagrangian-Eulerian finite element formulation for incompressible viscous flows." *Computer methods in applied mechanics and engineering* 29.3 (1981): 329-349.

Bazilevs, Y., Calo, V.M., Hughes, T.J. and Zhang, Y., 2008. Isogeometric fluid-structure interaction: theory, algorithms, and computations. *Computational mechanics*, 43, pp.3-37.

Fracture

Miehe, C., Welschinger, F. and Hofacker, M., 2010. Thermodynamically consistent phase-field models of fracture: Variational principles and multi-field FE implementations. *International journal for numerical methods in engineering*, 83(10), pp.1273-1311.

Moës, N., Dolbow, J. and Belytschko, T., 1999. A finite element method for crack growth without remeshing. *International journal for numerical methods in engineering*, 46(1), pp.131-150.

Sukumar, N., Moës, N., Moran, B. and Belytschko, T., 2000. Extended finite element method for three-dimensional crack modelling. *International journal for numerical methods in engineering*, 48(11), pp.1549-1570.

Moës, N. and Belytschko, T., 2002. Extended finite element method for cohesive crack growth. *Engineering fracture mechanics*, 69(7), pp.813-833.