



Professor Bjørn Haugen

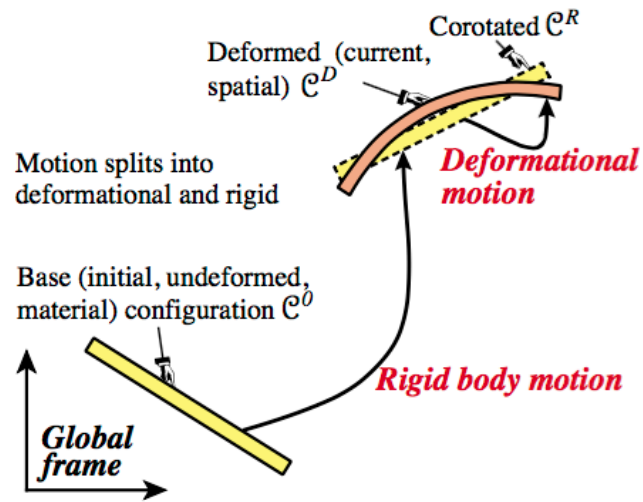


FIGURE 1. The CR kinematic description. Deformation from corotated to deformed (current) configuration grossly exaggerated for visibility.

From: Felippa, C. A. and Haugen, B., 2005, "A unified formulation of small-strain corotational finite elements: I. Theory", *Comput. Methods Appl. Mech. Engrg.*, Vol. 194, pp. 2285 - 2335

See:

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Research Interests:

Numerical methods in the fields: Finite element methods, formulations and implementation; Structural analysis and dynamics; Aluminum extrusion, fluid flow; geometric modeling, element mesh and CAD

Selected Publications:

Alvin, K., de la Fuente, H. M., Haugen, B. and Felippa, C.A. (1992) Membrane triangles with corner drilling freedoms: I. The EFF element. *Finite Elements in Analysis and Design*, 12 (3–4), 163–88

Felippa C.A., Crivelli L.A., Haugen B., "A survey of the core-congruential formulation for nonlinear finite element", *Arch. of Comput. Meth. in Engng.*, Vol. 1, 1994

Haugen, B., 1994, "Buckling and stability problems for thin shell structures using high performance finite elements", Ph.D thesis of University of Colorado, USA

B. Skallerud and B. Haugen, Collapse of thin shell structures: Stress resultant plasticity modeling within a corotated ANDES finite element formulation, *Int. J. Numer. Meth. Engrg.*, 46, 1961–1986, 1999.

B. Skallerud, L. I. Myklebust and B. Haugen, "Nonlinear response of shell structures: effects of plasticity modelling and large rotations", *Thin-Walled Structures*, Vol. 39, No. 6, June 2001, pp. 463–482

B. Skallerud, K. Holthe and B. Haugen, Combining high-performance thin shell and surface crack finite elements for simulation of combined failure modes, *Proc. 7th US Nat. Congress in Computational Mechanics*,

Albuquerque, NM, July 2003.

B. Skallerud, K. Holthe and B. Haugen, "Thin shell and surface crack finite elements for simulation of combined failure modes", *Computer Methods in Applied Mechanics and Engineering*, Vol. 194, Nos. 21-24, June 2005, pp. 2619-2640, Special Issue: Computational Methods for Shells

Felippa, C. A. and Haugen, B., 2005, "A unified formulation of small-strain corotational finite elements: I. Theory", *Comput. Methods Appl. Mech. Engrg.*, Vol. 194, pp. 2285 - 2335.

C.A. Felippa and B. Haugen, "A unified formulation of small-strain corotational finite elements: I. Theory", *Computer Methods in Applied Mechanics and Engineering*, Vol. 194, Nos. 21-24, June 2005, pp. 2285-2335, Special Issue: Computational Methods for Shells

B. Haugen and C. A. Felippa, A unified formulation of small-strain corotational finite elements: II. Applications to shells and mechanisms, in preparation.