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Title: Geometric Nonlinear Analysis of Timoshenko Beams with Variable Cross-Section Using Co-rotational Formulation
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The authors formulate a co-rotational Timoshenko beam element for large displacement analysis of 3D frames, considering the influence of variable cross-section. The solution of the equilibrium equations is used to interpolate the lateral displacements and rotations for improving the element efficiency. Numerical examples and experiments are carried out to confirm the accuracy of the element. The topic is of interest, but many issues should be clarified for further evaluation of the paper.

- Primarily, the solution of the equilibrium equations of a Timoshenko beam with variable cross-section is difficult to derive. The author should provide more details on the derivation of the solution and the considered section profile. I believe that a solution for a general section cannot be derived. Additionally, the number of Gauss points used to evaluate the element tangent stiffness and mass matrices depends on the profile of the beam section. It is difficult to evaluate the element without knowing this information.

- The authors claim that "the proposed method achieves both high computational efficiency and accuracy in handling large deformations and nonlinear behavior", but the efficiency is not demonstrated in the paper.

- The presentation should be improved. Section 3 presents the co-rotational framework, which is well-known in the literature, but no references are cited. A 3D beam is considered, but the equilibrium equation (1) is written for a 2D beam. An explanation for Eqs. (1)-(3) should be given.

- More information on the large deformation behavior of the structure, such as snap-through and snap-back, is required to show the efficiency of the element and numerical algorithm.