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Explicit isogeometric collocation for the dynamics of three-dimensional beams undergoing finite motions

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Highlights

- We initiate the study of geometrically exact beam dynamics through explicit IGA-C
- Finite rotations are represented through orthogonal matrices
- Configuration updates are performed exploiting spatial incremental rotation vectors
- A geometrically consistent explicit time integration scheme for SO(3) is employed
- Applications reveal the capabilities of the method for very large and fast motions