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An efficient and robust rotational formulation for isogeometric Reissner–Mindlin shell elements

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Highlights (for review)

A rotation-based isogeometric Reissner-Mindlin shell formulation which is able to handle finite rotations and large deformations is presented.

A continuous rotation of the director vector with multiplicative update ensures robust computations of arbitrarily curved structures

Three integration schemes are presented and compared in terms of computational costs and influence on accuracy

The efficiency of the proposed shell formulation is shown to be competitive to standard Lagrange-based finite element shell formulations

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