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Isogeometric analysis for nonlinear planar Kirchhoff rods: Weighted residual formulation and collocation of the strong form

Florian Maurin, Francesco Greco, Sander Dedoncker, Wim Desmet

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- NURBS-based isogeometric rotation-free nonlinear planar Kirchhoff rods are tackled.
- The weighted residual formulation and collocation of the strong form are investigated.
- Reduced Gauss-Lobatto quadrature, Greville and superconvergent points are employed.
- Convergence-order estimates for fourth-order PDEs are provided based on observations.
- The MIP Newton method greatly improves the convergence robustness.

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