Spatial IsoGeometric Beam Elements
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Motivation
• Use CAD geometry for analysis of 3D beams
• Geometrical Locking in spatial beams
• Multi patch formulations

Solution for the problem
• Higher continuity available with NURBS
• Hierarchic timoshenko for shear locking removal
• Hierarchic Hybrid stress(p3p1) formulations for membrane locking removal

Example
IsoGeometric spatial curved beams

Literature:
• Hughes et.al,2005: Isogeometric Analysis
• Kiendl et.al,2010: The bending strip method for Isogeometric analysis

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