FEM for NURBS Surface Shells

Michael Weise[1]

The application of shell theories in FEM requires a description of the shell midsurface geometry and its derivatives. Modern computer aided design software uses non-uniform rational B-splines for geometry description. Therefore, it is natural to incorporate NURBS surfaces in an FEM code.

In our talk we give some insights on how to implement FEM for Naghdi shells. A specialty is the incorporation of tangential vectors with continuous directions, but jumping lengths. Such vectors may occur when NURBS surfaces are glued together.

[1] Technische Universität Chemnitz, Mathematics, Chemnitz,
`michael.weise@mathematik.tu-chemnitz.de`