ISOGEOMETRIC ANALYSIS AND HIGHER ORDER BEM FOR NONLINEAR NONSMOOTH BOUNDARY VALUE PROBLEMS FROM CONTACT MECHANICS

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Isogeometric analysis [1, 2] uses higher order non-uniform rational B-splines, respectively T-splines as ansatz functions. This leads to a nonconforming approximation when applied to nonlinear boundary value problems with unilateral constraints and other nonsmooth equations that arise in contact mechanics [3]. In this contribution we discuss how the recent numerical analysis of hp-BEM/FEM for this kind of problems [4, 5] can be extended to the ISO BEM. To this end we start from the variational formulation of contact problems as variational inequalities [3], employ the Galerkin method for discretization, and use Mosco set convergence [6] for the convergence analysis.

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