

## HIGHER ORDER APPROXIMATION METHODS IN COMPUTATIONAL MECHANICS

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### ABSTRACT

In the last decades, several classes of methods with higher order of approximation have been proposed and tested. Among them, we find the class of meshless methods, the class of isogeometric methods and the class of generalized finite elements. Typical applications are those in which higher order of approximation is desirable, or a higher order of accuracy of the derivatives is required. Smooth problems like the Kirchhof-Love shell theory or contact between solids are the target of such methods. Gradient plasticity, composites and other problems with local effects are also promising fields of application.