

ISOGEOMETRIC AND NON-STANDARD DISCRETIZATION METHODS FOR THE SIMULATION OF REAL WORLD STRUCTURES TRACK NUMBER 1200

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ABSTRACT

Over the last two decades, a large variety of non-standard discretization schemes, aiming at improving the classical finite element analysis, have emerged in the field of structural mechanics. Amongst them, some are based on the isogeometric concept [1] and/or fictitious domain approaches [2], that facilitate the geometry modeling within analysis and provide higher robustness and accuracy with respect to the standard finite elements computations. If the fundamentals and interests have been proven in the academic community, the true application of such advanced techniques to tackle realistic engineering problems is currently undergoing important effort [3].

In this context, the proposed mini-symposium invites all contributions from the field of isogeometric and non-standard discretization methods that successfully address large-scale, real world, and/or industry applications. Typical topics are expected to be, but not restricted to: spline-based discretizations, isogeometric analysis and integration of CAD and CAE, collocation methods, fictitious domain approaches, higher-order finite elements, X-FEM/partition of unity methods, domain coupling, multi-scale analysis, non-linear static or dynamic analysis, shell modeling as well as design optimization.

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