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MINISYMPOSIUM ON ADVANCES IN MESH-REDUCTION TECHNIQUES: BEM AND MESHLESS METHODS

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Key words: Boundary Element Method, Meshless Method, Spectral Method, Method of Fundamental Solutions, Radial-basis Collocation Method, Moving Particle Method.

ABSTRACT

The purpose of this mini-symposium is to bring together scientists and engineers from different fields to share advances and new findings in the formulation and implementation of mesh-reduction techniques such as the Boundary Element Method, Spectral Methods, Method of Fundamental Solutions, Radial-basis Collocation Methods, Moving Particle Methods, and other novel methodologies. These techniques have undergone rigorous research over the last few decades and have been successfully applied to a variety of problems in science and engineering ranging from solid and fluid mechanics to heat transfer and electromagnetics, among many others. Although the predominant feature of mesh-reduction methods in general concentrates around their capacity of minimizing human interaction and problem setup as well as their flexibility to adapt to variations in the problem geometry, they have achieved a maturity level that have gained them notoriety and have placed them in a position to compete in efficiency, accuracy, and stability with more established mesh-based domain techniques such as the Finite Element Method and the Finite Volume Method.

Participation of researchers from different fields constitutes a valuable opportunity to consolidate and unify views and directions by sharing advances and new findings on mesh-reduction techniques.