

HIGH PERFORMANCE COMPUTING FOR STRUCTURAL MECHANICS FROM ACADEMIC DEVELOPMENTS TO INDUSTRIAL CHALLENGES

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ABSTRACT

This mini-symposium aims at gathering people from both academic and industrial world concerned by the large scale simulation of structural mechanics problems. Contributions are welcomed regarding all the steps of the computation, including both solver, pre and post processing steps :

- distributed preprocessing, parallel mesh generation;
- high performance robust solvers (domain decomposition methods, multigrid methods...);
- robustness improvement (optimal coarse space, multipreconditioning);
- parallel non linear solvers, asynchronous algorithms;
- advanced engineering problems: multiple point constraints, frictional / non-frictionnal contact;
- distributed postprocessing, error estimation and mesh adaption.