

Sunday, October 14, 2012

Check list for WP4 BENCHMARK STUDIES

All comments and suggested modifications to this document will be collected until Sunday, October 21, 2012. This document is aimed to provide directions for preparation of an abstract and later a paper on WP4 BENCHMARK STUDIES. The due date for abstracts is Sunday, November 4, 2012.

Mainly benchmark studies refer to computer simulations (numerical analysis) however; examples of experimental studies and examples of calculations following the EC (Eurocode) procedures are also welcomed.

A benchmark example should satisfy the following requirements:

1. The problem considered should be relatively simple, easy to understand.
2. The considered case can show little of practical meaning. It is supposed to be used for verification of computational models not top solve an engineering problem.
3. Before selecting a problem for your benchmark studies search the literature for similar examples. Check manuals of commercial codes (the list is provided in the presentation placed on the Dropbox).
4. The complete input data must be provided in the way easy to follow. Identify all assumptions of material properties, boundary conditions, temperature distribution, loading conditions, large/small deformations and displacements. For experimental examples all measurements and detailed description of the test procedure should be provided.
5. For numerical examples consider mesh density study. It should be shown that provided result is within the range of asymptotic convergence.
6. Consider using alternative numerical models. e.g. different codes or solid vs. shell finite elements (if possible). Such approach increases the validity of the solution.
7. Publishing a benchmark study we claim that this is a reliable solution. Hopefully this assumption will be verified by other users.