

Congress on Numerical Methods in Engineering – CMN 2015

June 29 to July 2, 2015, IST, Lisbon, Portugal / org. by AMPTAC and SEMNI

Proposal for Organized Thematic Session:

TS: Coupled problems and parallel computing in engineering / Problemas acoplados e computação paralela em engenharia / Problemas acoplados y computación paralela en ingeniería

In the last decades, numerical methods have become very important in obtaining solutions to complex engineering problems. Different topics of interest (not limited to) to the present thematic session are the development of numerical methods to multi-physics and multidisciplinary problems; the coupling of different solution strategies; the joint use of different mathematical formulations and numerical methods, while maximizing individual advantages of each technique; and the application of these concepts to challenging science and engineering problems.

It has become evident that one can no longer expect more performance from computers by a continuous increase of the CPU clock rate. Instead, we have been observing that the CPUs that have been produced have an essentially constant CPU speed but an increasing number of cores. Therefore, increasing the performance of engineering codes and also tackling more complex problems requires that the codes have to be parallel and scale to more and more processors. Thus there is an increasing interest by the engineering community in parallel processing, either by parallelizing older codes or designing parallel codes from scratch.

The main purpose of this thematic session is to present and discuss up-to-date methodologies and engineering applications involving coupling problems and parallel computing techniques.

Session Co-Organizers (in alphabetical order):

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