WORKSHOP
NEMO - NumErical MOdelling using high performance computing infrastructures

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Solid Earth Dynamics Department,
Institute of Geodynamics of the Romanian Academy, Romania.
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1) PRESENTATION TITLE:

Code parallelization algorythms.

2) AUTHORS, AFFILIATION:

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3) ABSTRACT:

In the last decades a remarkable progress in all scientific domains was achieved by taking advantage of the growing tendency of using instruments that make computations easier and faster. In this presentation we will present a general overview regarding high performance computing facilities, with a focus on the newly implemented supercomputing facility at IGAR - CyberDyn.

As such, aspects of the structural parallelism of a computer cluster are briefly presented. We will discuss the fact that having as many identical computing nodes as possible, is a key example of the structural paralellism present in a computer cluster. As well is the presence of a ultra-high speed interconnect.

The scheduling and management software components are also mentioned because these collections of auxiliary computer programs are a requirement in order to run parallel codes. Also, we will show how their main role is to dynamically assign the necessary hardware resources at execution time.

Further, this paper is describing the stages of the transformation process from a sequential code to a parallel one.

Finally, we will present results from runs of parallel codes used to test several scenarios regarding the geodynamic evolution of Vrancea seismogenic zone.

4) POSITION OF CORRESPONDING AUTHOR:

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Post-Doctoral	~~yes~~	**no**
Researcher	~~yes~~	**no**