

Software Parallelization, High Performance Computing and Cloud Computing Efforts in Electromagnetics

11 April 2014 – 9:00 – 10:40

Room Oceania

The workshop "Software Parallelization, High Performance Computing and Cloud Computing Efforts in Electromagnetics" is organized within the framework of European COST IC1102 (VISTA) Action, Focus Area C: Parallelization and Cloud Computing (<http://www.cost-vista.eu/organisation/focus-areas/fa-c/>).

The topics of the workshop are recent advances in:

- High performance computing applied to computational electromagnetics.
- Numerical electromagnetics on multiple core computers.
- Computational electromagnetics using graphic processing units (GPUs).
- Parallel electromagnetic codes for clusters of computers.
- Cloud computing and applications to computation electromagnetics.
- Electromagnetics codes for heterogeneous computing environment (i.e., computational environment with interconnected computers of different computational capabilities and architecture).

The first part of the workshop consists of presentation from industry, primarily electromagnetic software and hardware vendors, who will talk about their latest advances. After the presentations, a panel discussion about present and future research in parallelization, high performance computing and cloud computing efforts for electromagnetic applications will follow.

The workshop is open and free of charge to all EuCAP 2014 participants.

Organisers:

Dr. Dragan I. Olcan (University of Belgrade)

Dr. Francesca Vipiana (Politecnico di Torino)

Programme:

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| 9:00-9:10 | Opening remarks
<i>Dr. Dragan Olcan and Dr. Francesca Vipiana</i> |
| 9:10-9:25 | "High Performance and Cloud Computing for Electromagnetic Simulation Applications"
<i>David Prestaux, ANSYS</i> |
| 9:25-9:40 | "Faster Design Cycles with High Performance Computing"
<i>Dr. Frank Demming-Janssen, CST Principal Engineer, Country Manager Northern Germany/BeNeLux</i> |
| 9:40-9:55 | "Very high performance FDTD simulation using EMPIRE XPU Technology"
<i>A. Wien, W. Simon EMPIRE IMST GmbH, Antennas & EM Modelling,</i> |

- 9:55-10:10 "Parallelization, GPU Acceleration and General HPC Aspects of the Computational Electromagnetics Code FEKO"
Dr. Martin Vogel, FEKO EM Software & Systems (USA), Inc., Hampton, VA, USA
- 10:10-10:25 "Parallelization of MoM-Based EM Code on GPU-Accelerated Cluster"
Branko Mrdakovic, WIPL-D R&D engineer, WIPL-D d.o.o.
- 10:25-10:40 Discussion & closing remarks:
Dr. Dragan Olcan and Dr. Francesca Vipiana.