OmpSs tutorial, and Tareador Education Session among other BSC activities in SC13

Are you interested in finding out about OmpSs or Tareador?

Don’t miss the upcoming OmpSs tutorial #117 "Asynchronous Hybrid and Heterogeneous Parallel Programming with MPI/OmpSs and its Impact in Energy Efficient Architectures for Exascale Systems" at Supercomputing 2013 in Denver, Colorado. Also related to the previous tutorial, you can learn more about how Tareador can help you developing OmpSs applications in the HPC Educators program session "Exploring Parallelization Strategies at Undergraduate Level".

Don’t miss ScalA at SC’13! The 4th in the series workshop focuses on novel scalable scientific algorithms that are needed to enable key science applications to exploit the computational power of large-scale systems. The program can be found at www.csm.ornl.gov/srt/conferences/Scala/2013/

As in previous editions, the BSC will be actively participating at the SC13 conference. During the
Due to its asynchronous nature and look-ahead capabilities, MPI/OmpSs is a promising programming model approach for future exascale systems, with the potential to exploit unprecedented amounts of parallelism, while coping with memory latency and load imbalance. Many large applications are already seeing very positive results from the integration of MPI/OmpSs with heterogeneous systems such as GPUs and clusters thereof. The integration of MPI with OmpSs facilitates the migration of current MPI applications by overlapping computation with communication between tasks. The tutorial will also cover the performance tools available for the programming model and will present an overview of the currently most popular platforms for MPI/OmpSs. Tareador provides a very intuitive approach to visualize these strategies and understand their implications. The programmer needs to perform simple code annotations to identify tasks and annotated tasks. Tareador also feeds Dimemas, a simulator to predict the potential of the proposed strategy on heterogeneous systems: Challenges and Opportunities. We will first cover the basic concepts of the programming model. Unlike OpenMP, OmpSs runtimes can be scheduled at runtime thanks to the directionality of data arguments. The OmpSs runtime supports asynchronous execution and clusters thereof. The integration of MPI and OmpSs improves the performance of these applications by overlapping computation with communication between tasks. The tutorial will also present the Paraver performance analysis tool. Examples of benchmarks and applications parallelized with MPI/OmpSs will be presented. The tutorial will also cover the impact of the programming model on porting of current MPI applications to heterogeneous platforms. Examples of efficient parallel platforms. The tutorial will also cover the impact of the programming model on porting of current MPI applications to heterogeneous platforms.