JULY 18, 2018 | 10:00-12:00 | LRZ, HÖRSAAL

„TAMING INTEL XEON PROCESSORS WITH OPENMP "

SPECIAL LECTURE HOSTED BY LRZ AND PRACE (PARTNERSHIP FOR ADVANCED COMPUTING IN EUROPE)

THIS TALK WILL BE PRESENTED IN ENGLISH

SPEAKER

Dr. Michael Klemm
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Dr. Michael Klemm is part of the Developer Relations Division at Intel. His focus is on High Performance and Throughput Computing.

He received a Doctor of Engineering degree (Dr.-Ing.) in Computer Science from the Friedrich-Alexander-University Erlangen-Nuremberg, Germany. His areas of interest include compiler construction, design of programming languages, parallel programming, and performance analysis and tuning.

Michael is Intel representative in the OpenMP Language Committee and is also the Chief Executive Officer of the OpenMP Architecture Review Board.

ABSTRACT

As today's supercomputers are built out of massively parallel processors, parallel programming for these systems for best parallel performance becomes an important task for today's developers. One example is the most recent Intel Xeon processor (aka „Skylake"), which employs up to 28 cores with wide 512-bit SIMD instructions. In this talk, we will review the architecture of the Intel Xeon processor and show how OpenMP can be applied to program for such processors.

Starting from the node-level architecture, we will dive into the micro-architecture of the Intel Xeon processor and provide insights into its performance capabilities. We will then turn towards the OpenMP programming model. After a quick recap of traditional OpenMP threading techniques, we will introduce the concepts of modern OpenMP programming with OpenMP tasks, OpenMP SIMD, and how to control memory allocation and affinity.

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