

High performance computing in science and engineering '11 : transactions of the High Performance Computing Center, Stuttgart (HLRS) 2011

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Abstrak

This book presents the state-of-the-art in simulation on supercomputers. Leading researchers present results achieved on systems of the High Performance Computing Center Stuttgart (HLRS) for the year 2011. The reports cover all fields of computational science and engineering, ranging from CFD to computational physics and chemistry, to computer science, with a special emphasis on industrially relevant applications. Presenting results for both vector systems and microprocessor-based systems, the book allows readers to compare the performance levels and usability of various architectures. As HLRS operates not only a large cluster system but also one of the largest NEC vector systems in the world, this book also offers excellent insights into the potential of vector systems. The book covers the main methods used in high-performance computing. Its outstanding results in achieving highest performance for production codes are of particular interest for scientists and engineers alike. The book comes with a wealth of color illustrations and tables of results.