

16th Colloquium Lecture, School of Mathematics Faculty of Mathematics and Physics

Esmond G. Ng

(Lawrence Berkeley National Laboratory)

Thursday, April 23, 2015, 14:00, Lecture hall K3
Sokolovská 83, Praha 8 - Karlín

Sparse Gaussian Elimination: Myths and Facts

Solving sparse systems of linear equations is at the heart of many large-scale scientific and engineering computation. Sparse direct methods, which are based on Gaussian elimination, are known to be memory bound and hence are often discarded as the methods of choice for large-scale computation. Yet, they are reliable because they terminate after a finite number of operations. In this talk, we will consider several common criticisms of sparse Gaussian elimination and comment on their validity. The talk will touch on several aspects of sparse Gaussian elimination, such as efficiency, data structures, graph theory, complexity analysis, and computer architectures.

About the speaker

Prof. Esmong G. Ng is a well-known specialist in Sparse Matrix Computation, Numerical Linear Algebra, Computational Complexities problems, as well as in Parallel Computing and Mathematical software in general. He heads the Applied Mathematics Department in the Computational Research Division of the Lawrence Berkeley National Laboratory, Berkeley, CA, USA. For more information see <http://crd.lbl.gov/about/staff/applied-mathematics/esmond-ng/>.

Colloquium Lecture

The 16th Colloquium Lecture of the School of Mathematics is organized in cooperation with *Department of Numerical Analysis*, MFF UK.

Further information

<http://msefce.karlin.mff.cuni.cz/colloquia>