DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE
ODENSE UNIVERSITY

COMPUTER SCIENCE COLLOQUIUM

Parallel Computers and Numerical Algorithms

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The Seminar Room

Abstract: In the talk I will first briefly describe parallel computers and some of the difficulties that one is faced with when designing parallel algorithms: communication, load balancing, etc.

Next, I will touch upon the numerical difficulties encountered in connection with parallel computing. For example, it may be necessary to use less stable numerical algorithms – compared to traditional algorithms for sequential computers – in order to achieve optimal parallel performance.

Finally, I will illustrate the above difficulties by means of two parallel algorithms in numerical linear algebra: solution of linear systems of equations, and computation of the singular value decomposition.

Edmund Christiansen