ÉCOLE POLYTECHNIQUE
FÉDÉRALE DE LAUSANNE

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SEMINAR OF NUMERICAL ANALYSIS

- **WEDNESDAY 16 NOVEMBER 2011 - ROOM CM 013 - 16h15**

Prof. Christian Lubich, (Univeristy of Tübingen, Germany) will present a seminar intitled:

"Low-rank dynamics for computing extremal points of real and complex pseudospectra"

Abstract:

We consider the real epsilon-pseudospectrum of a real square matrix, which is the set of eigenvalues of all real matrices that are epsilon-close to the given matrix, where closeness is measured in either the 2-norm or the Frobenius norm. We characterize boundary points and compare the situation with that for the complex epsilon-pseudospectrum. We present differential equations for rank-1 and -2 matrices for the computation of the real pseudospectral abscissa and radius.
Discretizations of the differential equations yield algorithms that are fast and well suited for sparse large matrices.

Lausanne, 4 November 2011/DK /cr