

# DIFFERENTIAL GEOMETRY/PDE SEMINAR

WEDNESDAY, OCTOBER 4, 2006

PADEL FORD C-36

3:50-5PM

The Pseudospectra of Systems of Operators

**Nils Dencker**

(LUND UNIVERSITY)

The pseudo-spectra (spectral instability) of non-selfadjoint operators is a topic of current interest in pure and applied mathematics. In fact, for non-selfadjoint operators the resolvent could be very large away from the spectrum, making the numerical computation of eigenvalues impossible. This has importance, for example, for the stability of flows and the transition to turbulence for solutions to the Navier-Stokes equations.

The occurrence of pseudo-spectra for semiclassical operators is due to the existence of quasi-modes, i.e., approximate local solutions to the eigenvalue problem. For scalar operators, the quasi-modes appear since the Nirenberg-Treves condition ( $\Psi$ ) is not satisfied for topological reasons, see the paper of Dencker, Sjöstrand and Zworski in CPAM 57:3 (2004).

In this talk we shall explain how these results can be generalized to systems of operators, for which new phenomena appear.

For more information about this seminar, visit the DG/PDE Seminar Web page (from the Math Department home page, [www.math.washington.edu](http://www.math.washington.edu), follow the link **Seminars, Colloquia, and Conferences**).

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