

MATHEMATICS DEPARTMENT
North Carolina State University

JOINT NUMERICAL ANALYSIS AND
DIFFERENTIAL EQUATIONS SEMINAR

Wednesday, December 18, 2002
2:35 p.m. 330 Harrelson Hall

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**“Smoothness indicator
for adaptive algorithms”**

I will introduce a new smoothness indicator (SI). It is based on the weak local residuals of approximate solutions for multidimensional systems of hyperbolic conservation laws.

The SI is used in locally adaptive solution algorithms as a tool to identify “rough” solution regions. It is implemented in mesh adaption and scheme adaption algorithms using the central-upwind scheme recently proposed by S. Noelle, G. Petrova and myself.

Numerical examples in one and two space dimensions demonstrate the robustness of the proposed SI, and its potential in reducing computational costs and improving the resolution of the solution.

Graduate students are invited to attend.

For questions, comments, and offers to talk, contact Steve Schecter, schecter@math.ncsu.edu.
Please visit the DE Seminar web page at www.math.ncsu.edu/seminars.html.