ÉCOLE POLYTECHNIQUE
FÉDÉRALE DE LAUSANNE

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Mathematics Institute of Computational Science and Engineering - MATHICSE

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SEMINAR OF NUMERICAL ANALYSIS

➢ **WEDNESDAY 21 OCTOBER 2015 - ROOM MA A1 10 - 16h15**

Prof. David KOPRIVA, (The Florida State University, Tallahassee, USA) will present a seminar entitled:

"Towards robust high order methods: Nodal discontinuous Galerkin methods that are provably stable"

Abstract:

To get accurate solutions to fluid flow problems one can use high order approximations (e.g. $4 <=$ Order $<= 20$). High order methods have great promise, among the most important being the potential for greatly improved computational efficiency when compared to low order methods. Unfortunately, the positive features of high order discretizations, like low dissipation, mean they often lack the robustness needed for industrial level computations. In this talk, I present a skew-symmetric nodal DG spectral element method that is provably stable for linear problems on static or moving curved element meshes at any order. The approximation is also conservative, and free-stream (constant state) preserving when appropriate.

Lausanne, 10 September 2015/JH/cr

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The MATHICSE seminars are announced at http://mathicse.epfl.ch/seminars