

Oberseminar Numerik am 27.06.13

Vortragender:

Dieter Schuster
(Deutscher Wetterdienst, Abteilung Meteorologische Analyse und Modellierung)

Titel:

"A new dynamical core for numerical weather prediction based on discontinuous Galerkin methods"

Abstrakt:

At the moment, most of the short range numerical weather prediction (NWP) models are based on finite differences. One example is the "COSMO" model, which is used for operationally weather forecast at the Deutscher Wetterdienst and several other weather services.

This talk is about the development of a new solver for the gas dynamics for COSMO, which is based on Discontinuous Galerkin (DG) methods. The aim is to get a high order, locally conservative method which is well suited for massively parallel computer systems with even more than 10.000 processors.

The talk gives a short introduction to NWP models, shows the details of the used DG method and for validation of the scheme the results are shown of idealised linear and non-linear test cases with meteorological relevance.