NUMERISCHE PARALLELE SIMULATION SFB 393

Seminar

des DFG-Sonderforschungsbereichs 393

Parallele Numerische Simulation für Physik und Kontinuumsmechanik

Zeit :	Freitag, 23. 04. 2004, 11.00 Uhr
Ort :	2/201
Vortragender :	Bernhard Mehlig (Chalmers University, Göteborg, Schweden)
Thema :	Clustering of inertial particles in turbulent aerosols

Networks of caustics can occur in the distribution of particles suspended in a randomly moving (turbulent) gas. These give rise to aggregation of the particles by bringing them into close proximity. We show that the long-time morphology of these caustic patterns is determined by the Lyapunov exponents of the suspended particles, as well as the rate at which particles encounter caustics. We develop a theory determining this rate and the Lyapunov exponents from the statistical properties of the gas flow, in the limit of short correlation times. Our results are expected to be of interest in the context of turbulent aerosols (sand storms, dust particles in the exhaust of diesel engines), and for describing inertial particles in turbulent liquids.

Das Seminar wird von Prof. Meyer geleitet. Interessenten sind herzlich eingeladen.