Mathematisches Seminar

des Sonderforschungsbereichs 393

Numerische Simulation auf

massiv parallelen Rechnern

Zeit: Freitag, 18.06.1999, 9.00 Uhr

Ort: Reichenhainer Straße 70, B202

Vortragender: I. Lukovsky, A. Timokhar (Kiew)

Thema: Variational approach to some nonlinear sloshing problems

We construct variational formulations for a numerical-analytical approach to the problem on nonlinear fluid sloshing in a tank of finite depth. By asymptotic techniques we derive an approximate model describing nonlinear phenomena due to high-frequency exterior excitations. The finite-dimensional model is used to simulate diverse steady-state, transient surface waves etc. We introduce a so-called *vibrocapillary equilibrium shape* by means of a pseudo-potential extremal principle and analyze its stability. Some hints on the numerical simulations are given and will be compared with experimental results.

Zeit: Freitag, 18.06.1999, 10.45 Uhr

Ort: Reichenhainer Straße 70, B202

Vortragender: I. Gawriljuk (Leipzig), V. Makarov, V. Trotsenko (Kiew)

Thema: Investigation of fluid sloshing in vessels with constructive devices

Linearized fluid sloshing is studied in a vessel with rigid or elastic constructive elements. On the basis of an operational calculus a numerical scheme is constructed and its convergence is proven. The expected effect of damping is confirmed by the numerical calculations and is in good agreement with experiments.

Interessenten sind herzlich eingeladen.

A. Meyer