KTH Datavetenskap och kommunikation inbjuder alla intresserade till en serie öppna föreläsningar där unga forskare berättar om sina vetenskapsområden och tillämpningar.

Måndag 12 Mars 2007, 15-16
sal D3, Lindstedtsvägen 5

ANNA-KARIN TORNBERG, KTH CSC, NUMERISK ANALYS

Boundary Integral Methods for Multiphase Flow

Systems with dynamic geometries present great challenges for computational methods. Examples of such problems include those with time-dependent boundaries that separate regions of different phases or different materials, such as immiscible multiphase flows and flows with immersed elastic or solid particles.

For problems where inertia is negligible, which is often the case for example for fluid mechanics on a small scale - so called micro-fluidics, the Stokes partial differential equations governing the dynamics can be reformulated as boundary integral equations.

In this lecture, we discuss the concept of boundary integral equations, and some properties of numerical methods built upon these. Results are presented for flows with immersed solid and elastic particles and fibers as well as for locomoting micro-organisms.

Välkommen till en docentföreläsning: CSC - Forskning och framtid