CSC Seminar

SPEAKER

Prof. Dr. Michael Hinze

University of Koblenz-Landau

TITLE

Fluid mechanic shape optimization with phase field models

ABSTRACT

We consider a phase field approach to shape and topology optimization in fluid flow. The mathematical modeling leads to a PDE constrained optimization problem with control in the coefficients where the control enters as phase field in the Darcy term of the Navier-Stokes model. We prove existence of solutions and present a numerical realization based on the finite element method. We illustrate the performance of our approach with some numerical examples.

This is joint work with Harald Garcke (University Regensburg) and Christian Kahle (University of Koblenz-Landau).

Tuesday, October 20, 2020 at 2 pm

Seminar room Prigogine V0.05-2+3 and BBB