



Mathematics and CS Seminar

On implicitly constituted fluids

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Host: Julian Fischer

We present several aspects of implicit constitutive theory for homogeneous non-Newtonian fluids. In particular, we consider the maximal monotone graph setting which allows for the implicit formulation of the rheology and boundary conditions. We discuss graphs parametrized by temperature, but also a new type of boundary condition where not the full shear stress, but only its part is related to the slip velocity via the graph. Finally, we present a new approach where the existence of a Borel measurable selection of the graph need not be a priori assumed. Moreover, we define an implicit function whose null points define such general maximal monotone graph. All cases are applied to Navier-Stokes systems, where the existence analysis for long-times and large data is provided. Joint works with J. Zabenský, A. Abbatiello, M. Bulík and J. Málek.

Tuesday, January 26, 2021 02:00pm - 04:30pm

Online via Zoom



This invitation is valid as a ticket for the ISTA Shuttle from and to Heiligenstadt Station. Please find a schedule of the ISTA Shuttle on our webpage: <https://ista.ac.at/en/campus/how-to-get-here/> The ISTA Shuttle bus is marked ISTA Shuttle (#142) and has the Institute Logo printed on the side.