



Vienna School
of Mathematics

PhD Colloquium

Flora Philipp

On a Chemotaxis–Navier–Stokes System

Abstract: This talk provides a gentle introduction to a fluid-dynamical system. In particular, we focus on a Chemotaxis–Navier–Stokes system arising in the modeling of vasculogenesis, the biological process responsible for the formation of new blood vessels.

After motivating the model from both biological and mathematical perspectives, we discuss analytical techniques used to establish existence of solutions and place these results into a broader context. Finally, we examine structural properties of the system and discuss the equations from the perspective of thermodynamically consistent continuum mechanics.

May 18, 2026, 15:30-16:30

TUForMath Room DAEGH18, Freihaus, TU Wien
(Wiedner Hauptstrasse 8-10)