SPEAKER:

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TITLE:

Quantitative regularity for the steady and unsteady 3D Navier-Stokes equations

ABSTRACT:
In this talk, I will focus on two aspects of the quantitative regularity theory of solutions to the 3D Navier-Stokes equations. First, I will address the local regularity for the steady Navier-Stokes equations near very rough (bumpy, possibly fractal) boundaries. There the emphasis is on large-scale regularity and on local wall laws. In the second part of the talk, I will concentrate on the quantitative regularity for the time-dependent Navier-Stokes equations, away from boundaries. There the emphasis is on explicit quantitative control of subcritical norms in terms of scale-invariant quantities. This talk is based on joint works with Mitsuo Higaki and Jinping Zhuge on the one hand, and Tobias Barker on the other hand.