



Dear Colleagues!

Institute of Mathematics of the University of Georgia is pleased to invite you to the Online Tbilisi Analysis & PDE Seminar. The seminar is held bi-weekly on Mondays at 16 : 00 GMT (at 17 : 00 CET, at 20 : 00 local time in Tbilisi).

**Talk on January 31, 2022**

**Speaker:** Prof. **Heiko Gimperlein**, University of Innsbruck and University of Parma  
<https://www.macs.hw.ac.uk/~hg94/>

The title of the lecture: **“Boundary regularity for fractional Laplacians: a geometric approach”**

**Abstract:** We consider the sharp boundary regularity of solutions to the Dirichlet problem for the fractional Laplacian on a smoothly bounded domain in Euclidean space. The fractional Laplacian is defined via the extension method, as a Dirichlet-to-Neumann operator for a degenerate elliptic problem in a half-space of one higher dimension. We use techniques from geometric microlocal analysis to analyse the regularity of solutions, with particular emphasis on asymptotic expansions and Hölder continuous data. Detailed and sharp results about this problem have been obtained by Gerd Grubb, and we present a complementary approach. Extensions to polygonal domains are mentioned.

**Date:** January 31, 2022

**Time:** 16 : 00 GMT (17 : 00 CET and 20 : 00 local time in Tbilisi)

## How to join:

The seminar is organized on the **Cisco Webex Meetings**. If you are already registered, you do not need to register again. Otherwise, to join the seminar please send an e-mail to [seminarim@ug.edu.ge](mailto:seminarim@ug.edu.ge) or register here:

<https://forms.gle/xfQJ9fg1uqe7CrZw6>

You will then receive further information.

**WEB of Seminar:** <https://www.ug.edu.ge/en/tbilisi-analysis-and-pde-seminars>

## Organizers:

1. R. Duduchava, Institute of Mathematics, University of Georgia, Tbilisi
2. E. Shargorodsky, Department of Mathematics, King’s College London
3. G. Tephnadze, Institute of Mathematics, University of Georgia, Tbilisi

## Secretary:

M. Tsaava, Institute of Mathematics, University of Georgia, Tbilisi

## Technical support:

Z. Vashakidze, Institute of Mathematics, University of Georgia, Tbilisi

