

Tbilisi Analysis & PDE Seminar



Credit:
https://www.math.ku.dk/Billeder/1100x600/Gerd_Grubb_2020-1100x600.jpg

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).

Seminar on April 19:

Speaker: Prof. Gerd Grubb, Department of Mathematical Sciences, University of Copenhagen (UCPH);
<https://www.math.ku.dk/english/staff/?pure=en/persons/64670>

The title of the lecture: “Boundary problems for fractional-order operators”

Abstract: There has recently been an upsurge of interest in the fractional Laplacian $\{\left(-\Delta\right)\}^{\{a\}}\{\left(0<a<1\right)\}$ and other fractional-order pseudodifferential operators $\{P\}$, because of applications in financial theory and probability (and also in differential geometry and mathematical physics). The boundary problems for $\{P\}$ on subsets $\{\Omega\}$ of $\{R\}^{\{n\}}$ are challenging since $\{P\}$ is nonlocal; here there have mostly been used real methods from potential theory and integral operator theory, or probabilistic methods.

As we know, the pseudodifferential point of view should be useful too, in view of Vishik and Eskin's work in the sixties, and many later works. I shall tell about a circle of results developed in the last 8 years, based on the transmission condition introduced by Hörmander (in his book '85 and in a lecture note '66), telling also how they differ from the results in Eskin's book '81.

The pseudodifferential methods have not been popular in the applications community, partly because Fourier transform techniques (and complex functions) do not seem to be part of the toolbox, partly because the ps.d.o. methods originally have required much smoothness of operators and domains. In particular, the handling of nonsmooth domains by nonsmooth coordinate changes has lacked a thorough development. I will end by telling of recent progress in this question, in a collaboration with Helmut Abels completed last year.

Date: April 19, 2021;

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 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-seminar>

Organizers:

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2. E. Shargorodsky, Department of Mathematics, King's College London
3. G. Tephnadze, Institute of Mathematics, University of Georgia, Tbilisi

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