



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 Tuesdays at 20 : 00 local time in Tbilisi.

**Talk on March 5, 2024**

**Speaker:** Prof. **Joachim Toft**, Linnæus University;  
<http://www.nsamko.com/>

**The title of the lecture:** “**Fractional Fourier transform, harmonic oscillator propagators and Strichartz estimates**”

**Abstract:** Using the Bargmann transform, we give a proof of that harmonic oscillator propagators and Fractional Fourier Transforms (FFT) are essentially the same. We deduce continuity properties for such operators on modulation spaces, and apply the results to prove Strichartz estimates for the harmonic oscillator propagator when acting on modulation spaces. We also show that general forms of fractional harmonic oscillator propagators are continuous on suitable so-called Pilipović spaces and their distribution spaces. Especially we show that FFT of any complex order can be defined, and that these transforms are continuous on strict Pilipović function and distribution spaces.

*The talk is based on a joint work with Divyang Bhimani and Ramesh Manna.*

**Date:** March 5, 2024

**Time:** 20 : 00 local time in Tbilisi;

**(Compare to your local time:** <https://www.timeanddate.com/worldclock/georgia/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:

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

