Dear Colleagues!

V. Kupradze 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 February 18, 2025

Speaker: Dr. **Clifford Gilmore**, Université Clermont Auvergne.
`https://www.cliffgilmore.com/`

"Universality of composition operators and applications to complex dynamics"

Abstract: We consider universality properties of composition operators $C_f\colon g \mapsto g \circ f$, acting on spaces of holomorphic functions, where the symbol f is given by a transcendental entire function restricted to parts of its Fatou set $F(f)$. The investigation of this topic was initiated by Jung [2], and it lies at the interface of complex dynamics and operator theory.

In the spirit of [2], we will discuss new results on the universality of C_f when the symbol f is restricted to certain Baker and wandering domains. In the case where such universal functions exist, we will describe their local behaviour near points of f that have specific dynamical properties.

We will also consider the more general class of weighted composition operators, $W_{\omega,f}\colon g \mapsto \omega \cdot (g \circ f)$, in this context. We uncover analogous universality results for this larger class, which permits us to further extend applications of the theory to the domain of complex dynamics.

(This is joint work with V. Evdoridou and M. Manolaki [1]).

References

[1] V. Evdoridou, C. Gilmore and M. Manolaki *Interactions between Universal Composition Operators and Complex Dynamics.* ArXiv:2409.16260, 2024.

[2] A. Jung. Universality of composition operators and applications to holomorphic dynamics. *J. Anal. Math.*, 137(2):845–874, 2019.

Date: February 18, 2025
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 **Zoom Platform**. 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-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

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