

Women in Mathematics in South-Eastern Europe

December 11 – 13, 2024, Sofia, Bulgaria

Exploring Bi-Univalent Functions: New Perspectives on Coefficient Bounds and Function Classes

Şahsene Altınkaya

Department of Mathematics and Statistics, University of Turku, Finland

sahsene.altinkaya@utu.fi

This talk explores recent developments in the study of bi-univalent functions, focusing on their geometric properties, including univalence, starlikeness, and convexity within the open unit disk, as well as the challenges they present in mathematical analysis. Special attention is placed on finding coefficient estimates, which is a key part of my research. Furthermore, by examining how parameter changes relate to well-known polynomial sequences, I show how these functions help us better understand Geometric Function Theory (GFT) and how they may influence future studies. This presentation aims to give a clear overview of the theoretical progress and practical outcomes of my work, contributing to ongoing discussions in complex analysis.

Şahsene Altınkaya is supported by the Scientific and Technological Research Council of Türkiye (TUBITAK 2219 - International Postdoctoral Research Fellowship Program for Turkish Citizens), Project Number: 1059B192402218.