



# Analysis Seminar

## Kelvin-Möbius-Invariant Harmonic Function Spaces on Real Unit Balls of Higher Dimensions

By

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**Abstract:** We define Kelvin-Möbius transforms as compositions with harmonic Möbius maps followed by Kelvin transforms to preserve harmonicity. We determine the harmonic function spaces on the real unit ball that are invariant under the action of these transforms. For each dimension at least 3, we identify the maximal and minimal invariant Banach spaces, the unique invariant Hilbert space, and all invariant Bergman-Besov spaces. There are essential differences between dimension 2 and higher dimensions. In dimensions 3 or higher, invariant spaces are defined with genuine norms, there is a whole family of invariant weighted Bergman spaces, and a unique invariant harmonic Hardy space exists.

This is joint work with A. Ersin Üreyen of Eskişehir Teknik Üniversitesi.

**Date:** Tuesday, February 25, 2020

**Time:** 16:00-17:00

**Place:** Mathematics Seminar Room, SA – 141

Tea and cookies will be served before the seminar.