

SEMINAR OF ANALYSIS

Friday, November 7, 2025 - Room: MA B1 11 at 2.15 pm

Dr. Josef Greilhuber

(Stanford University, USA)

will present a seminar entitled:

« Hypersurfaces on which few harmonic functions vanish »

Abstract:

It is easy to see that if one harmonic function vanishes on a given set in the Euclidean plane, then infinitely many linearly independent harmonic functions do. Perhaps surprisingly, this is no longer true in higher dimensions: In any dimension greater than two, there exist cones on which exactly two linearly independent harmonic functions vanish. This result holds on the level of germs at the origin. We will also show that smooth hypersurfaces can exhibit the same phenomenon if one asks for harmonic functions defined on a large enough (but still bounded) domain in Euclidean space. This last observation rests on a surprising unique continuation result in ellipsoidal coordinates.

Lausanne, October 6th, 2025

Seminars are announced on the Mathematics Section website:

<https://memento.epfl.ch/event/hypersurfaces-on-which-few-harmonic-functions-vani/>

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