Barcelona Analysis Seminar **2025–2026**

Date: December 11, 2025
Time: 15:00 CET
Room: C3b-158 (Universitat Autònoma de Barcelona)

Quantitative Unique Continuation for the Neumann Problem in Planar $C^{1,\alpha}$ Domains

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In this paper, we study the quantitative unique continuation property of second-order elliptic operators under vanishing Neumann boundary conditions over $C^{1,\alpha}$ domains in two dimensions. Combining the monotonicity formula with the tool of quasiconformal mapping in two dimensions, we establish an almost sharp upper bound for the doubling index, which further implies an explicit bound on the size of level sets. As byproducts, vanishing orders, critical points, Cauchy uniqueness, and related topics are also discussed.

This is joint work with Jinping Zhuge.