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Barcelona Analysis Seminar **2023–2024**

Date: Thursday May 23, 2024

Time: 15:00 CET

Room: CRM A1 (Universitat Autònoma de Barcelona)

Simultaneous approximation in the Bloch space

Adem Limani

Universitat Autònoma de Barcelona

In this talk, we discuss the problem of describing subset E of the unit circle, for which the following simultaneous approximation phenomenon arises: there exists analytic polynomials $(Q_n)_n$ such that $Q_n \to 0$ uniformly on E, but $Q_n \to 1$ in a Banach space X of holomorphic functions in the unit disc $\mathbb{D}$. The problem of simultaneous approximation was thoroughly investigated by S. Khrushchev in the context of holomorphic functions in $\mathbb{D}$ enjoying certain radial growth conditions. We initiate similar investigations in the Bloch space, a function space which plays a crucial role in geometric function theory. It turns out that this problem is connected to removable sets for holomorphic Sobolev functions in the plane and has rather deep applications to problems on approximation in de Branges-Rovnyak spaces and to Menshov universality of Taylor series.

More information at: `https://mat.uab.cat/web/seminarianalisi/`