II Joint Conference of the Belgian, Royal Spanish and Luxembourg Mathematical Societies
Logroño, June 6–8, 2016

Isomorphic copies of ℓ_1 for m-homogeneous non-analytic Bohnenblust-Hille polynomials

Juan B. Seoane-Sepúlveda[1]

We employ a classical result by Toeplitz (1913, [3]) and the seminal work by Bohnenblust and Hille on Dirichlet series (1931, [1]) to show that the set of continuous m-homogeneous non-analytic polynomials on c_0 contains an isomorphic copy of ℓ_1. Moreover, we can have this copy of ℓ_1 in such a way that every non-zero element of it fails to be analytic at, precisely, every non-zero point belonging to an infinite dimensional linear subspace.

The material presented in the lecture is part of a joint work ([2]) with **J. Alberto Conejero** and **Pablo Sevilla-Peris** (IUMPA - Universitat Politècnica de València, Spain).

References

[1] H. F. Bohnenblust, H. F. and E. Hille, E., *On the absolute convergence of Dirichlet series*. Ann. of Math. (2) 1931, 600–622.

[2] J. A. Conejero, J.B. Seoane-Sepúlveda, and P. Sevilla-Peris, *Isomorphic copies of ℓ_1 for m-homogeneous non-analytic Bohnenblust–Hille polynomials*. Preprint, 2016.

[3] O. Toeplitz, *Über eine bei den Dirichletschen Reihen auftretende Aufgabe aus der Theorie der Potenzreihen von unendlichvielen Veränderlichen*. Nachrichten von der Königlichen Gesellschaft der Wissenschaften zu Göttingen, 1913, 417–432.

[1]Departamento de Análisis Matemático,
Facultad de Ciencias Matemáticas,
Plaza de Ciencias 3,
Universidad Complutense de Madrid,
28040 Madrid, Spain
AND
Instituto de Ciencias Matemáticas (CSIC-UAM-UC3M-UCM)
C/ Nicolás Cabrera 13–15
Campus de Cantoblanco, UAM
28049 Madrid, Spain.
jseoane@ucm.es