SEMINAR

on

COMPLEX AND HYPERCOMPLEX ANALYSIS

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Riesz basis of exponentials for convex polytopes with symmetric faces

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I will discuss a joint result with Nir Lev, which states that for any convex and centrally symmetric polytope $\Omega \subset \mathbb{R}^d$, whose faces of all dimensions are also centrally symmetric, there exists a Riesz basis of exponential functions $\{e^{2\pi i \langle \lambda, x \rangle}\}_{\lambda \in \Lambda}$ for $L^2(\Omega)$.

This result extends previously known statements in this direction due to Lyubarskii and Rashkovskii, and also due to Walnut ($d = 2$), and by Grepstad and Lev (in arbitrary dimensions), where the same conclusion is obtained under the additional assumption that all the vertices of Ω lie in the lattice $\mathbb{Z}^d$.

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