Pumagrass
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Speaker: Alexey Balitskiy
Title: On the isometric conjecture of Banach, which might not hold for dimension 133

Abstract

In 1932, Banach asked: if all n-dimensional subspaces of a Banach space are isometric ($n > 1$ if fixed), does this imply that the space is Hilbert? In 1967, Gromov proved this for even n, and the proof is pure algebraic topology. Very recently, Bor, Hernández, Jiménez, and Montejano extended this result to $n = 4k + 1$ except maybe $n = 133$. I hope to sketch the ideas behind this wacky result, involving basic convexity, reasonable topology, and additional facts from [guess what given the appearance of 133].