ΠΑΝΕΠΙΣΤΗΜΙΟ ΙΩΑΝΝΙΝΩΝ

ΤΜΗΜΑ ΜΑΘΗΜΑΤΙΚΩΝ

Εβδομαδιαίο Σεμινάριο

Star bodies with completely symmetric sections

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We say that a centrally symmetric star body K is completely symmetric if it has centroid at the origin and its symmetry group G forces any ellipsoid whose symmetry group contains G, to be a ball. We prove that if all central sections of a star body L are completely symmetric, then L has to be a ball. A particular case of this result settles a relatively well known problem in Geometric Tomography. This is a consequence of a general theorem, stating that if the restrictions to almost all equators of a real function f defined on the sphere, are isotropic functions, then f is constant a.e. I will try to discuss all necessary background and give detailed proofs of the aforementioned results. (based on joint work with Sergii Myroshnychenko and Dima Ryabogin)

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