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Unique determination of ellipsoids by their dual volumes

Gusakova and Zaporozhets conjectured that ellipsoids in $\mathbb{R}^n$ are uniquely determined up to an isometry by their intrinsic volumes. In this talk, we will present a solution to the dual problem in all dimensions. We show that an ellipsoid is uniquely determined up to an isometry by its dual Steiner polynomial. We also discuss an alternative proof of the analogous known result of Petrov and Tarasov for classical Steiner polynomials in $\mathbb{R}^3$. This is joint work with S. Myroshnychenko and V. Yaskin.