

1065-52-93

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Only Solid Spheres Admit a False Axis of Revolution.

Let $K \subset \mathbb{R}^3$ be a convex body. A point p_0 is a point of revolution for K if every section of K through p_0 has an axis of symmetry that passes through p_0 . In particular, every point that lies in an axis of revolution is a point of revolution. A line $L \subset \mathbb{R}^3$ is a *false axis of revolution*, if every point of L is a point of revolution for K but L is not an axis of revolution. The purpose of this paper is to prove that only solid spheres admit a false axis of revolution. (Received September 03, 2010)