**Karp, Lavi**

**On the Newtonian potential of ellipsoids.** (English) Zbl 0830.31003

Complex Variables, Theory Appl. 25, No. 4, 367-371 (1994).

It is known that the Newtonian potential of a uniform mass distribution of an ellipsoid is equal to a quadratic polynomial inside the ellipsoid. In 1931 *P. Dive* [Bull. Soc. Math. Fr. 59, 128-140 (1931; Zbl 0004.16601)] proved that the converse is valid – if $K$ is a bounded solid in $\mathbb{R}^3$ and its Newtonian potential is equal to a quadratic polynomial inside it, then $K$ is an ellipsoid; in 1986 *E. DiBenedetto* and *A. Friedman* [Indiana Univ. Math. J. 35, 573-606 (1986; Zbl 0667.35074)] generalized this result to the case of $\mathbb{R}^m$, $m > 2$.

The author uses some topological methods to obtain a simpler proof of that result.

Reviewer: M.Dont (Praha)

**MSC:**

31B20 Boundary value and inverse problems for harmonic functions in higher dimensions

Cited in **2** Documents

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