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极体的体积确定凸体

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Determination of a convex body by the volume of its polar bodies

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全文: PDF (257 KB) HTML (1 KB) 输出: BibTeX | EndNote (RIS) 背景资料

摘要 利用球面调和函数和Hamburger矩方法,证明了,
 \mathbb{R}^n 中一个包含半径为 δ 的球的原点对称凸体,
能被其在此球附近的所有点的极体的体积所唯一确定.

关键词: 凸体 体积 极体

Abstract: Using tools of spherical harmonics and Hamburger's moment, we proved that an origin-symmetric convex body containing a sphere of radius δ in its interior is determined in \mathbb{R}^n by the volume of its polar bodies with respect to all the points near the sphere.

Key words: convex body volume polar body

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[1] {1}

[2] MEYER M, WERNER E M. The Santal^o-regions of a convex body[J]. Trans Amer Math Sci, 1998, 350(11): 4569-4591.

[3] {2}

[4] MEYER M, PAJOR A. On the Blaschke-Santal^o inequality[J]. Arch Math (Basel), 1990, 55: 82-93.

[5] {3}

[6] SAINT RAYMOND J. Sur le volume des corps convexes sym^etriques[C]// S^eminaire d'initiation^a l'Analyse. Paris: Univ Pierre et Marie Curie, 1980.

[7] {4}

[8] {4}

[9] {4}






[10] {4}






[11] {4}

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- [12] MAHLER K. Ein $\{U\}$ bertragungsprinzip $\{u\}$ r Konvexe $K\{o\}$ rper[J].
- [13] $u\{C\}$ asopis $\text{P}\{u\}$ st Mat Fys, 1939, 68: 93-102.
- [14] {5}
- [15] MAHLER K. Ein Minimalproblem $\{u\}$ r Konvexe Polygone[J].
- [16] Mathematica (Zutphen), 1939, 7: 118-127.
- [17] {6}
- [18] REISNER S. Random polytopes and the volume-product of symmetric
- [19] convex bodies[J]. Math Scand, 1985, 57: 386-392.
- [20] {7}
- [21] REISNER S. Zonoids with minimal volume-product[J]. Math Z, 1986,
- [22] 2: 339-346.
- [23] {8}
- [24] REISNER S. Minimal volume product in Banach spaces with a
- [25] unconditional basis[J]. London Math Soc, 1987, 36: 126-136. 
- [26] {9}
- [27] GORDON Y, MEYER M, REISNER S. Zonoids with minimal volume product-a
- [28] new proof[J]. Proc Amer Math Soc, 1988, 104: 273-276.
- [29] {10}
- [30] BOURGAIN J, MILMAN V D. New volume ratio properties for convex
- [31] symmetric bodies in R^n [J]. Invent Math, 1987, 88: 319-340. 
- [32] {11}
- [33] BALL K. Mahler's conjecture and wavelets[J]. Discrete Comput Geom,
- [34] 95, 13: 271-277.
- [35] {12}
- [36] LOPEZ M A, REISNER S. A special case of Mahler's conjecture[J].
- [37] Discrete Comput Geom, 1998, 20: 163-177. 
- [38] {13}
- [39] $B\{O\}R\{O\}$ CZKY K J, HUG D. Stability of the reverse
- [40] Blaschke-Santal\{o\} inequality for zonoids and applications[J]. Adv
- [41] Appl Math, 2010, 44: 309-328.
- [42] {14}
- [43] BARTHE F, FRADELIZI M. The volume product of convex bodies with many
- [44] {15}
- [45] ARTSTEIN S, KLARTAG B, MILMAN V D. On the Santal\{o\} point of a
- [46] function and a functional Santal\{o\} inequality[J]. Mathematika,
- [47] 04, 54: 33-48.
- [48] {16}
- [49] FRADELIZI M, GORDON Y, MEYER M, et al. The case of equality for an
- [50] inverse Santal\{o\} functional inequality[J]. Adv Geom, 2010, 10: 
- [51] 1-630.
- [52] {17}
- [53] FRADELIZI M, MEYER M. Some functional forms of Blaschke-Santal\{o\}
- [54] inequality[J]. Math Z, 2007, 256: 379-395. 
- [55] {18}
- [56] FRADELIZI M, MEYER M. Increasing functions and inverse Santal\{o\}

- [57] inequality for unconditional functions[J]. Positivity, 2008, 12: 
- [58] 7-420.
- [59] {19}
- [60] FRADELIZI M, MEYER M. Some functional inverse Santal\{'o}
- [61] inequalities[J]. Adv Math, 2008, 218: 1430-1452. 
- [62] {20}
- [63] FRADELIZI M, MEYER M. Functional inequalities related to Mahler's
- [64] conjecture[J]. Monatsh Math, 2010, 159: 13-25. 
- [65] {21}
- [66] GROEMER H. Geometric Applications of Fourier Series and Spherical
- [67] Harmonics[M]. New York: Cambridge University Press, 1996.
- [68] {22}
- [69] KOLDOBSKY A. Fourier Analysis in Convex Geometry[M]. Providence, RI:
- [70] Amer Math Soc, 2005.
- [71] {23}
- [72] SCHNEIDER R. Convex Bodies: The Brunn-Minkowski Theory[M].
- [73] Cambridge: Cambridge University Press, 1993.
- [74] {24}
- [75] WANG Z, GUO D. Special Functions[M]. Singapore: World Scientific
- [76] Publishing Co, 1989. 
- [77] {25}
- [78] ANDREWS G, ASKEY R, ROY R. Special Functions[M]. Cambridge:
- [79] Cambridge Univ Press, 2000. 
- [80] {26}
- [81] AKHIEZER N I. The Classical Moment Problem, and Some Related
- [82] Questions in Analysis[M]. Edinburgh: Oliver and Boyd, 1965.