

ON INEQUALITIES FOR QUERMASINTEGRALS AND DUAL QUERMASINTEGRALS OF DIFFERENCE BODIES

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Abstract. In this paper, inequalities for quermassintegrals and dual quermassintegrals of difference bodies are given. In particular, an extension of the Rogers-Shephard inequality is obtained.

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REFERENCES

- [1] G. D. CHAKERIAN, *Inequalities for the difference body of a convex body*, Proc. Amer. Math. Soc. **18** (1967), 879–884.
- [2] R. J. GARDNER, *Geometric Tomography*, Cambridge Univ. Press, Cambridge, UK, 2nd edition, 2006.
- [3] R. J. GARDNER AND G. Y. ZHANG, *Affine inequalities and radial mean bodies*, Amer. J. Math. **120** (1998), 505–528.
- [4] G. H. HARDY, J. E. LITTLEWOOD AND G. PÓLYA, *Inequalities*, Cambridge University Press, Cambridge, 1959.
- [5] E. LUTWAK, *Dual mixed volumes*, Pacific J. Math. **58** (1975), 531–538.
- [6] C. A. ROGERS AND G. C. SHEPHARD, *The difference body of a convex body*, Arch. Math. **8** (1957), 220–233.
- [7] R. SCHNEIDER, *Eine verallgemeinerung des differenzkörpers*, Monatsh. Math. **74** (1970), 258–272.
- [8] R. SCHNEIDER, *Convex Bodies: The Brunn-Minkowski theory*, Cambridge Univ. Press, Cambridge, 1993.