

## EXCESS VERSIONS OF THE MINKOWSKI AND HÖLDER INEQUALITIES

IOSIF PINELIS

*Abstract.* Certain excess versions of the Minkowski and Hölder inequalities are given.

*Mathematics subject classification (2010):* 26D15, 60E15.

*Keywords and phrases:* Minkowski's inequality, Hölder's inequality,  $p$ -excess.

### REFERENCES

- [1] S. KARLIN AND W. J. STUDDEN, *Tchebycheff systems: With applications in analysis and statistics*, Pure and Applied Mathematics, vol. XV. Interscience Publishers John Wiley & Sons, New York-London-Sydney, 1966.
- [2] J. H. B. KEMPERMAN, *On the FKG-inequality for measures on a partially ordered space*, Nederl. Akad. Wetensch. Proc. Ser. A 80 = Indag. Math. **39**, 4 (1977), 313–331.
- [3] MATHOVERFLOW, *A Minkowski-like inequality*, <https://mathoverflow.net/q/292327> (version: 2018-02-07).
- [4] I. PINELIS, *Tchebycheff systems and extremal problems for generalized moments: a brief survey*, <http://arxiv.org/abs/1107.3493>, 2011.
- [5] I. PINELIS, *On the extreme points of moments sets*, Math. Methods Oper. Res. **83**, 3 (2016), 325–349.
- [6] B. H. POURCIAU, *Modern multiplier rules*, Amer. Math. Monthly **87**, 6 (1980), 433–452.
- [7] H. L. ROYDEN, *Real analysis*, Second edition, 1968.
- [8] G. WINKLER, *Extreme points of moment sets*, Math. Oper. Res. **13**, 4 (1988), 581–587.