

VECTOR VALUED FOURIER ANALYSIS ON HYPERGROUPS

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Abstract. The aim of this paper is to prove the vector-valued version of the classical Hausdorff-Young inequality for commutative hypergroups and compact hypergroups.

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REFERENCES

- [1] W. R. BLOOM AND HERBERT HEYER, *Harmonic analysis on probability measures on hypergroups*, De Gruyter, Berlin (1995).
- [2] S. DEGENFELD-SCHONBURG, *Multipliers for hypergroups: Concrete Examples, Applications to Time series*, Doctoral Dissertation, 2012.
- [3] S. DEGENFELD-SCHONBURG AND R. LASSER, *Multipliers on L^p -spaces for hypergroups*, Rocky Mountain J. Math., 43 (2013) 1115–1139.
- [4] E. G. EFFROS AND Z.-J. RUAN, *Operator spaces*, Oxford University Press, 2000.
- [5] J. GARCÍA-CUERVA AND J. PARCET, *Vector-valued Hausdorff-Young inequality on compact groups*, Proc. London Math. Soc., 88(3) (2004) 796–816.
- [6] R. I. JEWETT, *Space with an abstract convolution of measures*, Adv. in math, 18 (1975) 1–101.
- [7] V. KUMAR AND R. SARMA, *The Hausdorff-Young inequality for Orlicz spaces on compact hypergroups*, Colloquium Mathematicum (2019) (accepted).
- [8] E. MICHAEL, *Topologies on spaces of subsets*, Trans. Amer. Math. Soc., 71 (1951) 152–182.
- [9] M. MILMAN, *Complex interpolation and geometry of Banach spaces*, Ann. Mat. Pura Appl., 136 (1984) 317–328.
- [10] G. PISIER, *Introduction to the Theory of Operator Spaces*, London Mathematical Society Lecture Notes Series, Vol. 294, Cambridge University Press, 2003.
- [11] G. PISIER, *Non-commutative vector valued L_p -spaces and completely p -summing maps*, Astérisque, 247 (1998) 1–111.
- [12] R. C. VREM, *Representations and harmonic analysis of compact hypergroups*, Doctoral Dissertation, University of Oregon (1978)
- [13] R. C. VREM, *Harmonic analysis on compact hypergroups*, Pacific J. Math., 85 (1979) 239–251.