NONCOMMUTATIVE ORLICZ MODULAR
INEQUALITIES RELATED TO PARALLELOGRAM LAW

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Abstract. In this paper, we generalize the related parallelogram low inequalities to noncommutative Orlicz modular case. Besides, we give the k sets of operators of related noncommutative parallelogram law inequalities.

Mathematics subject classification (2010): 46L51, 46A80.

Keywords and phrases: Von Neumann algebra, noncommutative Orlicz modular spaces, related parallelogram low inequalities.

REFERENCES

[1] W. B. ARVESON, *Analyticity in operator algebras*, Amer. J. Math. **89** (1967), 578–642.
[2] G. PISIER, Q. XU, *Noncommutative L^p-spaces*, Handbook of the geometry of Banach spaces **2** (2003), 1459–1517.
[3] T. ANDO, X. ZHAN, *Norm inequalities related to operator monotone functions*, Math. Ann. **315** (1999), 771–780.
[4] T. FACK, H. KOSAKI, *Generalized s-numbers of τ-measure operators*, Pacific J. Math. **123** (1986), 269–300.
[5] M. S. MOSLEHIAN, M. TOMINAGA, K. SAITO, *Schatten p-norm inequalities related to an extended operator Parallelogram low*, Linear Algebra Appl. **435** (2011), 823–829.
[6] O. HIRZALLAH, F. KITTANEH, M. S. MOSLEHIAN, *Schatten p-norm inequalities related to a characterization of inner product spaces*, Math. Inequal. Appl. **13** (2) (2010), 235–241.
[7] J. MUSIELAK, *Orlicz spaces and modular spaces*, in: Lecture Notes in Math. Vol. 1034, Springer-Verlag, 1983.
[8] A. ABDUREXIT, T. N. BEKJAN, *Noncommutative Orlicz modular spaces associated with growth functions*, Banach J. Math. Anal. **9** (4) (2015), 115–125.
[9] A. ABDUREXIT, T. N. BEKJAN, *Noncommutative Orlicz-Hardy spaces associated with growth functions*, J. Math. Anal. Appl. **420** (1) (2014), 824–834.
[10] G. SADEGHI, *Non-commutative Orlicz spaces associated to a modular on τ-measurable operators*, J. Math. Anal. Appl. **395** (2012), 705–715.
[11] M. S. MOSLEHIAN, G. SADEGHI, *Inequalities for trace on τ-measurable operators*, Commun. Appl. Math. Comput. **28** (4) (2014), 379–389.
[12] R. CHENG, C. B. HARRIS, *Duality of the weak parallelogram laws on Banach spaces*, J. Math. Anal. Appl. **404** (1) (2013), 64–70.
[13] T. N. BEKJAN, D. DAUITBEK, *Submajorization inequalities of τ-measurable operators for concave and convex functions*, Positivity **19** (2015), 341–345.
[14] M. S. MOSLEHIAN, *An operator extension of the parallelogram law and related norm inequalities*, Math. Inequal. Appl. **14** (2) (2011), 717–725.

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Paper JMI-10-91

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