

SOME INEQUALITIES ON SUBLINEAR FUNCTIONALS RELATED TO THE INVARIANT MEAN FOR DOUBLE SEQUENCES

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Abstract. In this paper we define invariant mean for double sequences and construct a sublinear functional which dominates and generates invariant mean.

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REFERENCES

- [1] B. ALTAY AND F. BAŞAR, *Some new spaces of double sequences*, J. Math. Anal. Appl., **309** (2005), 70–90.
- [2] C. ÇAKAN, B. ALTAY AND M. MURSALEEN, *The σ -convergence and σ -core of double sequences*, Appl. Math. Lett., **19** (2006), 1122–1128.
- [3] A. GÖKHAN AND R. ÇOLAK, *The double sequence spaces $c_2^P(p)$ and $c_2^{PB}(p)$* , Appl. Math. Comput., **157** (2004), 491–501.
- [4] A. GÖKHAN AND R. ÇOLAK, *The double sequence spaces $l_2^\infty(p)$* , Appl. Math. Comput., **160** (2005), 147–153.
- [5] H. J. HAMILTON, *Transformations of multiple sequences*, Duke Math. J., **2** (1996), 29–60.
- [6] G. G. LORENTZ, *A contribution to theory of divergent sequences*, Acta Math., **80** (1948), 167–190.
- [7] F. MORICZ AND B. E. RHOADES, *Almost convergence of double sequences and strong regularity of summability matrices*, Math. Proc. Camb. Phil. Soc., **104** (1988), 283–294.
- [8] M. MURSALEEN AND OSAMA H. H. EDELY, *Almost convergence and a core theorem for double sequences*, J. Math. Anal. Appl., **293** (2004), 532–540.
- [9] M. MURSALEEN AND E. SAVAŞ, *Almost regular matrices for double sequences*, Studia Sci. Math. Hung., **40** (2003), 205–212.
- [10] M. MURSALEEN AND S. A. MOHIUDDINE, *Double σ -multiplicative matrices*, J. Math. Anal. Appl., **327** (2007), 991–996.
- [11] M. MURSALEEN AND S. A. MOHIUDDINE, *Regularly σ -conservative and σ -coercive four dimensional matrices*, Comput. Math. Appl., **56** (2008), 1580–1586.
- [12] M. MURSALEEN, *On some new invariant matrix methods of summability*, Quart. J. Math. Oxford, **34** (1983), 77–86.
- [13] M. MURSALEEN, *Almost strongly regular matrices and a core theorem for double sequences*, J. Math. Anal. Appl., **293** (2004), 523–531.
- [14] R. F. PATTERSON, *Double sequence core theorems*, Internat. J. Math. & Math. Sci., **22** (1999), 785–793.
- [15] A. PRINGSHEIM, *Zur theorie der zweifach unendlichen Zahlenfolgen*, Math. Z., **53** (1900), 289–321.
- [16] G. M. ROBINSON, *Divergent double sequences and series*, Trans. Amer. Math. Soc., **28** (1926), 50–73.
- [17] M. ZELTSER, *Matrix transformations of double sequences*, Acta Comment. Univ. Tartu Math., **4** (2000), 39–51.