

EMBEDDINGS BETWEEN WEIGHTED LOCAL MORREY-TYPE SPACES AND WEIGHTED LEBESGUE SPACES

R. CH. MUSTAFAYEV AND T. ÜNVER

Abstract. In this paper, the embeddings between weighted local Morrey-type spaces and weighted Lebesgue spaces are investigated.

Mathematics subject classification (2010): 42B35, 47B38.

Keywords and phrases: local Morrey-type spaces, weighted Lebesgue spaces, Hardy-type inequalities.

REFERENCES

- [1] V. I. BURENKOV, *Recent progress in studying the boundedness of classical operators of real analysis in general Morrey-type spaces. I*, Eurasian Math. J. **3**, 3 (2012), 11–32.
- [2] V. I. BURENKOV, *Recent progress in studying the boundedness of classical operators of real analysis in general Morrey-type spaces. II*, Eurasian Math. J. **4**, 1 (2013), 21–45.
- [3] V. I. BURENKOV, M. L. GOLDMAN, *Necessary and sufficient conditions for boundedness of the maximal operator from Lebesgue spaces to Morrey-type spaces*, Math. Inequal. Appl. **17**, 2 (2014), 401–418.
- [4] V. I. BURENKOV, H. V. GULIYEV, *Necessary and sufficient conditions for the boundedness of the maximal operator in local spaces of Morrey type*, (Russian) Dokl. Akad. Nauk **391**, 5 (2003), 591–594.
- [5] V. I. BURENKOV, H. V. GULIYEV, *Necessary and sufficient conditions for boundedness of the maximal operator in local Morrey-type spaces*, Studia Math. **163**, 2 (2004), 157–176.
- [6] V. I. BURENKOV, H. V. GULIYEV, V. S. GULIYEV, *Necessary and sufficient conditions for the boundedness of fractional maximal operators in local Morrey-type spaces*, J. Comput. Appl. Math. **208**, 1 (2007), 280–301.
- [7] V. I. BURENKOV, H. V. GULIYEV, V. S. GULIYEV, *On boundedness of the fractional maximal operator from complementary Morrey-type spaces to Morrey-type spaces*, The interaction of analysis and geometry, Contemp. Math. **424**, Amer. Math. Soc., Providence, RI, 2007, 17–32.
- [8] V. I. BURENKOV, V. S. GULIYEV, A. SERBETCI, T. V. TARARYKOVA, *Necessary and sufficient conditions for the boundedness of genuine singular integral operators in local Morrey-type spaces*, Eurasian Math. J. **1**, 1 (2010), 32–53.
- [9] V. I. BURENKOV, A. GOGATISHVILI, V. S. GULIYEV, R. CH. MUSTAFAYEV, *Boundedness of the fractional maximal operator in local Morrey-type spaces*, Complex Var. Elliptic Equ. **55**, 8–10 (2010), 739–758.
- [10] V. I. BURENKOV, A. GOGATISHVILI, V. S. GULIYEV, R. CH. MUSTAFAYEV, *Boundedness of the Riesz potential in local Morrey-type spaces*, Potential Anal. **35**, 1 (2011), 67–87.
- [11] V. I. BURENKOV, P. JAIN, T. V. TARARYKOVA, *On boundedness of the Hardy operator in Morrey-type spaces*, Eurasian Math. J. **2**, 1 (2011), 52–80.
- [12] V. I. BURENKOV, E. D. NURSULTANOV, *Description of interpolation spaces for local Morrey-type spaces*, (Russian, with Russian summary) Teoriya Funktsii i Differentsialnye Uravneniya, Tr. Mat. Inst. Steklova **269** (2010), 52–62. Translation: Proc. Steklov Inst. Math. **269**, 1 (2010), 46–56.
- [13] M. CHRIST, L. GRAFAKOS, *Best constants for two nonconvolution inequalities*, Proc. Amer. Math. Soc. **123**, 6 (1995), 1687–1693.
- [14] P. DRÁBEK, H. P. HEINIG, A. KUFNER, *Higher-dimensional Hardy inequality*, General inequalities, 7, Oberwolfach 1995, Internat. Ser. Numer. Math. **123**, Birkhäuser, Basel, 1997, 3–16.

- [15] A. GOGATISHVILI, R. CH. MUSTAFAYEV, *Dual spaces of local Morrey-type spaces*, Czechoslovak Math. J. **61(136)**, 3 (2011), 609–622.
- [16] A. GOGATISHVILI, R. CH. MUSTAFAYEV, *The multidimensional reverse Hardy inequalities*, Math. Inequal. Appl. **15**, 1 (2012), 1–14.
- [17] A. GOGATISHVILI, R. CH. MUSTAFAYEV, *New pre-dual space of Morrey space*, J. Math. Anal. Appl. **397**, 2 (2013), 678–692.
- [18] V. S. GULIYEV, *Function spaces, integral operators and two weighted inequalities on homogeneous groups. Some applications*, Elm, Baku, 1999 (Russian).
- [19] V. S. GULIYEV, R. CH. MUSTAFAEV, *Integral operators of potential type in spaces of homogeneous type*, (Russian) Dokl. Akad. Nauk **354**, 6 (1997), 730–732.
- [20] V. S. GULIYEV, R. CH. MUSTAFAEV, *Fractional integrals in spaces of functions defined on spaces of homogeneous type*, (Russian, with English and Russian summaries) Anal. Math. **24**, 3 (1998), 181–200.
- [21] A. KUFNER, L.-E. PERSSON, *Weighted inequalities of Hardy type*, World Scientific Publishing Co. Inc., River Edge, NJ, 2003.
- [22] B. MUCKENHOUPT, *Weighted norm inequalities for the Hardy maximal function*, Trans. Amer. Math. Soc. **165** (1972), 207–226.
- [23] B. OPIC, A. KUFNER, *Hardy-type inequalities*, Pitman Research Notes in Mathematics Series, 219, Longman Scientific & Technical, Harlow, 1990.
- [24] W. RUDIN, *Principles of mathematical analysis*, Second edition, McGraw-Hill Book Co., New York, 1964.