# Duality, Interpolation and Extrapolation for Weighted Grand Morrey Spaces

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Complex interpolation and duality problems for two-weighted grand Morrey spaces are studied. The derived interpolation statements are applied to obtain appropriate boundedness of linear operators of Harmonic Analysis in the aforementioned spaces with Muckenhoupt $A_p$ weights. Further, Rubio de Francía's extrapolation theorem for new weighted grand Morrey spaces $M_w^{p),\lambda,\theta}(X)$ with weights $w$ beyond the Muckenhoupt $A_p$ classes is established. This result, in particular, implies the one-weight inequality for operators of Harmonic Analysis in these spaces for appropriate weights.

The talk is based on the papers [1], [2], [3].

## References

[1] E. Gordadze, A. Meskhi and M. A. Ragusa, On some extrapolation in generalized grand Morrey spaces and applications to PDEs, *Electronic Research Archive*, 2023 (accepted).

[2] A.Meskhi, Extrapolation in new weighted grand Morrey spaces beyond the Muckenhoupt classes, *Journal of Mathematical Analysis and Applications*, 2023, https://doi.org/10.1016/j.jmaa.2023.127181.

[3] A. Meskhi, H. Rafeiro and T. Tsanava, Duality and interpolation for weighted grand Morrey spaces, *Trans. A. Razmadze Math. Inst.* **177** (2023), no. 1, 149-155.