

Daviti Adamadze

University of Bielefeld, Germany

Muckenhoupt Condition for Variable Exponent and Double Phase Models

To obtain more advanced results for the spaces of variable exponents $L^{p(\cdot)}$ and for double phase models, it is necessary to analyze the boundedness of the Hardy–Littlewood maximal operator on these spaces, which is a highly effective tool.

We demonstrate that the Muckenhoupt condition, combined with Nekvinda’s decay condition, implies the boundedness of the maximal function on $L^{p(\cdot)}$ including unbounded exponents. We extend this result to the double phase model as well.