



THE REVERSE HÖLDER INEQUALITY FOR $\mathcal{A}_{p(\cdot)}$ WEIGHTS WITH APPLICATIONS TO MATRIX WEIGHTS

DAVID CRUZ-URIBE OFS AND MICHAEL PENROD

Abstract: In this paper we prove a reverse Hölder inequality for the variable exponent Muckenhoupt weights $\mathcal{A}_{p(\cdot)}$, introduced in [8]. All of our estimates are quantitative, showing the dependence of the exponent function on the $\mathcal{A}_{p(\cdot)}$ characteristic. As an application, we use the reverse Hölder inequality to prove that the matrix $\mathcal{A}_{p(\cdot)}$ weights, introduced in [10], have both a right and left-openness property. This result is new even in the scalar case.

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Key words: variable Lebesgue spaces, Muckenhoupt weights, matrix weights, maximal operators, reverse Hölder inequality.