Abstract.

We employ the self-improving property (backward propagation) for the discrete Muckenhoupt class A_p, to prove that both discrete Hardy and discrete Hardy–Littlewood maximal operators are bounded on the usual weighted Lebesgue space $\ell_u^p(\mathbb{Z}^+)$ if and only if the weight u belongs to A_p. Some weak boundedness results for the Hardy–Littlewood maximal operators will also be discussed. To the best of the authors' knowledge, the results are essentially new and have not been discussed before.