

TITLE: General maximal operators and the Reverse Hölder classes

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ABSTRACT: By a basis in  $\mathbb{R}^n$  we mean a collection of open and bounded sets  $\mathfrak{B}$ . In this talk we show that, if the general maximal operator  $M_{\mathfrak{B}}$  satisfies  $M_{\mathfrak{B}} : L^p(\mathbb{R}^n) \rightarrow L^p(\mathbb{R}^n)$  for all  $1 < p \leq \infty$  and the weight  $w$  belongs to the Reverse Hölder  $\text{RH}_{\infty, \mathfrak{B}}$  class, then the weighted maximal operator  $M_{\mathfrak{B}, w}$  fulfils  $M_{\mathfrak{B}, w} : L^p(\mathbb{R}^n, w) \rightarrow L^p(\mathbb{R}^n, w)$ . We also investigate the equivalence between the Muckenhoupt class  $A_{\infty, \mathfrak{B}}$  and the Reverse Hölder class  $\text{RH}_{1, \mathfrak{B}}$ , when the general basis  $\mathfrak{B}$  has dyadic substructure with the Stein property.