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Weighted Weak Type Inequalities For The Hardy Operator When $p = 1$

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Abstract: The paper studies the weighted weak type inequalities for the Hardy operator as an operator from weighted L^p to weighted weak L^q in the case $p = 1$.

It considers two different versions of the Hardy operator and characterizes their weighted weak type inequalities when $p = 1$. It proves that for the classical Hardy operator, the weak type inequality is generally weaker when $q < p = 1$. The best constant in the inequality is also estimated.