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**Lijing Sun\*** (sun2@uwm.edu), Department of Mathematical Sciences, University of Wisconsin-Milwaukee, Milwaukee, WI 53201, and **Xiaoying Lin**. *Some estimates on the Hausdorff operator.*

Recently, sufficient conditions for the  $H^p$  boundedness of the one-dimensional Hausdorff operator were given by Lifyand and Miyachi. In this paper, we obtain new sufficient conditions for the  $H^p$  boundedness of the one-dimensional Hausdorff operator. The results of Lifyand and Miyachi and the results of this paper are mutually independent. More importantly, our method in the proof allows us to study the high dimensional Hausdorff operator and fractional Hausdorff operator. We then obtain  $H^p(\mathbb{R}^n) \rightarrow L^q(\mathbb{R}^n)$  and  $L^p(|x|^\gamma dx) \rightarrow L^q(|x|^\gamma dx)$  boundedness for the high dimensional (fractional) Hausdorff operator. (Received September 17, 2019)