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Research on the upper bound of Hausdorff measure of Koch curve. (Chinese. English summary)
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Summary: The upper bound estimation of Hausdorff measure of Koch curve is studied. By constructing a new cover with higher fractal level on Koch curve, the connected arc corresponding to the intersection of the new cover and Koch curve is obtained. The Hausdorff measure of Koch curve is calculated by using the relevant theorem, and a better upper bound estimation \( H^*(K) \leq 0.58764947 \) is obtained. This is the best upper bound of the Hausdorff measure of Koch curve so far known. Further analysis shows that the exact upper bound of Hausdorff measure of Koch curve is between 0.58764946 and 0.58764947.

MSC:
28A78 Hausdorff and packing measures
28A80 Fractals

Keywords:
fractal; Koch curve; Hausdorff measure; upper bound estimation

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