Hausdorff dimension of the level sets of Takagi's function

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In this talk we show that the Hausdorff dimension of each level set of the Takagi function is at most 1/2. This conjecture was recently posed by Maddock [3].

We prove this conjecture using the self-affinity of the function of Takagi and the existing relationship between the Hausdorff and box-counting dimension.

Precisely, the main result states that:

‹ *The Hausdorff and box-counting dimensions of the level sets L_y of the Takagi function T are at most 1/2.*›

Keywords. Takagi's function, level set, box-counting, Hausdorff dimension

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