

1106-AA-497

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Starting from a problem of Erdős, we are led to problems of estimating Hausdorff dimensions of sets arising in 3-adic dynamics. Generalizing the question then led to study of p -adic arithmetic operations acting on a class of fractal sets that we call p -adic path set fractals. These operations produce many interesting examples. These examples suggest new unsolved problems. The original motivating problem remains unsolved, too. (Received August 30, 2014)