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Samuel C Cohn and **Gautam Iyer***, Dept. of Math. Sci, WEH 6114, Carnegie Mellon University, Pittsburgh, PA 15206, and **James Nolen** and **Robert Pego**. *Anomalous diffusion in one and two dimensional combs.*

We study the effective behavior of a Brownian motion in both one and two dimensional comb like domains. This problem arises in a variety of physical situations such as transport in tissues, and linear porous media. We show convergence to a limiting process when when both the spacing between the teeth, and the probability of entering a tooth vanish at the same rate. This limiting process exhibits an anomalous diffusive behavior, and can be described as a Brownian motion time-changed by the local time of an independent sticky Brownian motion. At the PDE level, this leads to equations that have fractional time derivatives and are similar to the Bassett differential equation. (Received July 16, 2019)