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Anomalous Diffusion in a Running Sandpile Model*

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Abstract

We have used a simple cellular automata based on the dynamics of the sandpile to model the plasma transport. To explore the character of the underlying transport, we have followed the motion of tracer particles in the running sandpile. Several moments of the distribution of the particle radial locations have been determined and also their dependence on the elapsed time, $\langle [x(t) - x(0)]^n \rangle = D_0 t^n$. The exponent has been determined and found to be close to 3/4.

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