

## **On Meteors, Earthworms and WIMPs**

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I will discuss a model of mass redistribution on graphs. Each vertex initially holds some positive amount of mass. Meteors hit different sites (vertices) according to independent Poisson processes. I will focus on the stationary distribution – its existence, uniqueness and properties. The earthworm model assumes that the mass redistribution events are triggered by an earthworm – a symmetric random walk on the graph. A WIMP is a pair of “weakly interacting mathematical particles”. WIMPs are an essential tool in the analysis of the stationary distribution in our model.

Joint work with Sara Billey, Soumik Pal and Bruce Sagan.