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Riddhipratim Basu* (rbasu@stanford.edu), **Shirshendu Ganguly** and **Christopher Hoffman**. *Non-fixation for Activated Random Walk on the Line*.

We consider Activated Random Walk (ARW), a model which generalizes the Stochastic Sandpile, one of the canonical examples of self organized criticality. Informally ARW is a particle system on \mathbb{Z} with mass conservation. One starts with a mass density $\mu > 0$ of initially active particles, each of which performs a continuous time nearest neighbour symmetric random walk at rate one and falls asleep at rate $\lambda > 0$. Sleepy particles become active on coming in contact with other active particles. We investigate the question of fixation/non-fixation of the process and show for small enough λ the critical mass density for fixation is strictly less than one. Moreover, the critical density goes to zero as λ tends to zero. This positively answers two open questions from Dickman, Rolla, Sidoravicius (J. Stat. Phys., 2010) and Rolla, Sidoravicius (Invent. Math., 2012). (Received February 13, 2016)