On the minimum drift for recurrence in the frog model on $d$-ary trees.

We study the minimal drift $p_d$ so that the one-per-site frog model on a $d$-ary tree is recurrent. We prove that $p_d \leq 1/3$ for all $d \geq 2$, an optimal universal upper bound for $p_d$. To do this, we compare the frog model with the one-per-site self-similar frog model and couple the later across trees of different degrees and different drift parameters. (Received August 19, 2019)