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Spontaneous current induced by symmetry breaking in a system of random frequency oscillators HYUNGGYU PARK, JAEGON UM, Korea Institute for Advanced Study, HYUNSUK HONG, Chonbuk National University, FABIO MARCHESONI, University of Camerino — We investigate the onset of Ising-type symmetry breaking in a system of random frequency oscillators under a bistable pinning potential. In particular, we demonstrate the emergence of spontaneous current induced by symmetry breaking. As the potential barrier increases, the reentrant phase transition is found along with a drastic change of the phase transition nature at the turning point. Various other interesting features including negative mobility are also discussed.

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