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Unbounded stationary solutions of lattice Nagumo equation

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The lattice Nagumo equation is a discrete-space reaction-diffusion equation which is well known for its rich structure of bounded stationary patterns. We study another class of stationary solutions which is also unique to the lattice version of Nagumo equations – global unbounded stationary solutions. We show that for any bistable cubic nonlinearity and arbitrary diffusion rate there exists a two-parametric set of equivalence classes of generally asymmetric stationary solutions which diverge to infinity.