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Qiudong Wang* (dwang@math.arizona.edu), Department of Mathematics, University of Arizona, Tucson, AZ 85721. *Dynamics of Periodically Perturbed Homoclinic Solutions.*

We study the dynamics of homoclinic tangles in periodically perturbed second order equations. Let μ be the size of the perturbation and Λ_μ be the homoclinic tangles. We prove that (i) for infinitely many μ , Λ_μ contain *nothing else* but a horseshoe of infinitely many branches; (ii) for infinitely many μ , Λ_μ contain *nothing else* but one sink and one horseshoe of infinitely many branches; and (iii) there are positive measure set of μ so that Λ_μ admits strange attractors with Sinai-Ruelle-Bowen measure. (Received September 09, 2009)