

Chaotic models stabilized by stochastic perturbations with nonzero expectation

ALEXANDRA RODKINA¹, LEONID BRAVERMAN²

¹ *The University of the West Indies, Mona Campus, Kingston, Jamaica.*

E-mail address: alexandra.rodkina@uwimona.edu.jm

² *St Mary's University College and Athabasca University, Calgary, Canada.*

E-mail address: leonid.braverman@stmu.ca; leonidb@athabascau.ca

A map which experiences a period doubling route to chaos, under a stochastic perturbation with a positive mean, can have a stable blurred 2-cycle for large enough values of the parameter. The limit dynamics of this cycle is described. It was shown that well-known population dynamics models, like Ricker, truncated logistic, Hassel and May, and Bellows maps, have this stable blurred 2-cycle and belong to one of the three described types. In addition, there may be a blurred stable area near the equilibrium.