

1154-34-1149

Xiaoying Han*, 221 Parker Hall, Department of Mathematics and Statistics, Auburn University, Auburn, AL 36849, **Yusuke Asai**, Sapporo, Japan, and **Peter E Kloeden**, Tuebingen, Germany.

Dynamics of Zika Virus Epidemic in Random Environment.

A mathematical model for Zika virus dynamics under randomly varying environmental conditions will be introduced. In the model, the birth and loss rates for mosquitoes, and environmental influence are represented by random processes. Long term dynamics in terms of existence and geometric structures of random attractors and forward omega limit sets are investigated. In particular, sufficient conditions under which the prevalence of Zika virus among human beings decreases monotonically to zero, as well as conditions under which an epidemic occurs are established. (Received September 13, 2019)