

1058-37-172

**Marian Gidea\*** (mgidea@neiu.edu), Department of Mathematics, 5500 N St Louis Ave, Chicago, IL 60625, and **James Meiss**, **Ilie Ugarcovici** and **Howard Weiss**. *APPLICATIONS OF KAM THEORY TO POPULATION DYNAMICS*. Preliminary report.

Computer simulations have shown that several classes of population models, including the May host-parasitoid model and the Ginzburg-Taneyhill “maternal-quality” single species population model, exhibit extremely complicated orbit structures. These structures include islands-around-islands, ad infinitum, with the smaller islands containing stable periodic points of higher period. We identify the mechanism that generates this complexity and we discuss some biological implications. (Received February 14, 2010)