1011-34-396 **Michael Y Li*** (mli@math.ualberta.ca), Department of Mathematical Sciences, University of Alberta, Edmonton, AB T6G 2G1, Canada, and **Weishi Liu** (wliu@math.ku.edu), Department of Mathematics, University of Kansas, Lawrence, KS 66045. *Geometric Singular Perturbation Analysis of a Model for Infectious Diseases.*

A simple epidemic model for the spread of an infectious disease in a host population is analyzed using perturbation approach. The intrinsic growth rate of the host population is assumed to be a small parameter. The model gives rise to a singularly perturbed system of ordinary differential equations with a turning point. Geometric singular perturbation analysis of the global dynamics establishes the existence of stable relaxation oscillations. Our result suggests a correlation between the intrinsic growth rate of the host population and temporal cyclicity of the disease incidence. (Received September 01, 2005)