1023-92-941   **John E Franke*** (`franke@math.ncsu.edu`), Box 8205, Department of Mathematics, North Carolina State University, Raleigh, NC 27695-8205, and **Abdul-Aziz Yakubu**. *Multiple Attractors and Their Basins of Attraction in a Periodically Forced Discrete-time SIS Epidemic Model.* Preliminary report.

The effects of seasonality on a discrete-time susceptible-infected-susceptible (SIS) discrete-time epidemic model are investigated using an epidemic threshold parameter, Ro. In these periodic environments, Ro > 1 usually implies disease persistence on a global cyclic attractor, while Ro < 1 implies disease extinction. In constant environments, the demographic dynamics usually drives the disease dynamics. We prove that in periodic environments it is possible for the demographic dynamics to be on a global cyclic attractor while the disease dynamics has multiple attractors. That is, seasonality can induce multiple attractors in epidemic models. The formation of these multiple attractors and their basins of attraction are investigated. (Received September 23, 2006)