

Meeting: 1006, Lubbock, Texas, SS 10A, Special Session on Extinction, Periodicity, and Chaos in Population and Epidemic Models

1006-37-224 **K. W. Blayneh*** (kbenesh.blayneh@famu.edu), Florida A&M University, Department of Mathematics, Jackson Davis, 316, Tallahassee, FL 32307. *A Discrete SIS-Model for a Vector-Transmitted Disease*. Preliminary report.

A four by four system of difference equations is applied to study the dynamics of a disease transmitted by a vector rather than by direct contact. Two basic assumptions are made; the first assumption is, the vectors get the disease only by contacting infected hosts, and then transmit it to healthy hosts. The second assumption is that vectors don't get the disease directly from hosts, but from their own members through environmental factors and pass it to members of the host population. Under some conditions the stability of the disease-free and endemic equilibria in each case are studied using a combination of analytical and numerical approaches. (Received February 15, 2005)