1044-34-208 **Michael Y Li** (mli@math.ualberta.ca) and **Zhisheng Shuai*** (zshuai@math.ualberta.ca), Dept of Math and Stat Sci, 632 CAB, University of Alberta, Edmonton, AB T6G 2G1, Canada.

Global stability of multigroup SEIR epidemic models with nonlinear incidence.

Multigroup SEIR epidemic models with general nonlinear incidence $\beta_{kj} f_k(S_k) g_j(I_j)$ and varying subpopulation sizes are studied. Under some restrictions on transmission functions f_k and g_j, global stability of the endemic equilibrium is proved using the method of global Lyapunov functions and results from graph theory. For the special case of bilinear incidence, this global result completes determination of a sharp threshold for the multigroup SEIR model. (Received September 02, 2008)