1135-35-883 **Huicong Li*** (hli7@tulane.edu), Center for Partial Differential Equations, East China Normal University, 500 Dongchuan Road, Minhang, Shanghai, 200241, Peoples Rep of China. *Dynamics and asymptotic profiles of endemic equilibrium for SIS epidemic models with cross-diffusion.*

We consider two diffusive SIS epidemic models in heterogeneous environment, with a cross-diffusion term modeling the effect that susceptible individuals tend to move away from higher concentration of infected individuals. It is first shown that the corresponding Neumann initial-boundary value problem in a bounded smooth domain possesses a unique global classical solution which is uniformly-in-time bounded regardless of the strength of the cross-diffusion and the spatial dimension. It is further shown that, even in the presence of cross-diffusion, the models still admit the threshold-type dynamics in terms of the basic reproduction number $\mathcal{R}_0$; that is, the unique disease free equilibrium is globally stable if $\mathcal{R}_0 < 1$, while if $\mathcal{R}_0 > 1$, the disease is uniformly persistent and there is an endemic equilibrium which is globally stable in some special cases. Our results on the asymptotic profiles of endemic equilibrium illustrate that restricting the motility of susceptible population may eliminate the infectious disease entirely for the first model with constant total population but fails for the second model with varying total population. (Received September 16, 2017)