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Influence of temporary migration on the transmission of infectious diseases in migrants' home residence

In this talk we propose a delay differential equation model to study the influence of temporary migration on the transmission of infectious diseases in migrants' home residence. The model is shown to admit a unique equilibrium which is locally asymptotically stable and is globally asymptotically stable under certain conditions. This implies that the disease always persists. Considering tuberculosis as an example, we explore various disease prevention and control strategies numerically to demonstrate how the migration related parameters affect the early outbreak of the disease. We find that a single control strategy such as reducing the migration time period alone has little effect on reducing the disease endemic level. For disease prevention and control, temporary migrant workers should be identified as the top target group and a combination of several prevention strategies should be implemented.