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Global Dynamics of A Time-Delayed Dengue Transmission Model

In this talk, I will present an age-structured dengue model with time delays for the cross infection between mosquitos and human individuals. We first introduce the basic reproduction number R0 for this model and then show that the disease persists if R0 is greater than one, and the disease dies out if R0 is less than one, provided that the invasion intensity is not strong. We further establish a set of sufficient conditions for the global attractivity of the endemic equilibrium by using the method of fluctuations and the theory of chain transitive sets. This talk is based on a joint work with Zhen Wang.