1145-34-2245 **Quynh Nguyen*** (`nguyenqt@mail.uc.edu`), 3300 Jefferson Avenue, Cincinnati, OH 45220, and **Nguyenho Ho**. *Mathematical Model of Dengue Fever with Vertical Transmission in an Age-Structured Population.* Preliminary report.

It has been known that Dengue virus is transmitted by Aedes aegypti, which causes dengue fever and dengue hemorrhagic fever. The majority of the disease outbreaks occurs in tropical and subtropical countries including those in Southeast Asia. In addition, the number of disease cases may be different depending on age groups. Here, we propose an age-structured deterministic model to include juvenile and adult individuals for human host while vertical transmission is considered for vector populations (aquatic and adult mosquitoes). The stability of disease-free equilibrium and the reproduction number are analyzed and calculated. The model is used to numerically study the data collected from the Southern Vietnam providences during the outbreak periods. (Received September 25, 2018)