1138-35-297 **Yongki Lee*** (yongkilee@georgiasouthern.edu), Mathematical Sciences, 1332 Southern Drive, Statesboro, GA 30458. *Thresholds for shock formation in traffic flow models with nonlocal-concave-convex flux.*

We identify sub-thresholds for finite time shock formation in a class of non-local conservation law with concavity changing flux. From a class of non-local conservation laws, the Riccati-type ODE system that governs a solution's gradient is obtained. The changes in concavity of the flux function correspond to the sign changes in the leading coefficient functions of the ODE system. We identify the blow-up condition of this structurally generalized Riccati-type ODE. The method is illustrated via the traffic flow models with nonlocal-convave-convex flux. The techniques and ideas developed in this research is applicable to a large class of non-local conservation laws. (Received February 12, 2018)