

1077-35-2819

Jay Lawrence Hineman*, 719 Patterson Office Tower, University of Kentucky, Lexington, KY 40506. *Well-Posedness of Liquid Crystal Flow in L^3_{uloc}* . Preliminary report.

We analyze uniformly locally L^3 integrable (L^3_{uloc}) solutions of the hydrodynamic flow of the nematic liquid crystals in three dimensions. This model is a simplified version of the equations derived by Ericksen and Leslie. Weak solutions with small L^3_{uloc} norm are shown to be smooth. As a consequence, the local (or global) well-posedness in L^3_{uloc} (or small L^3_{uloc}) is established. (Received September 22, 2011)