1092-35-71   **Xiang Xu*** (`xuxiang@andrew.cmu.edu`), Carnegie Mellon University, Wean Hall 6113, Pittsburgh, PA 15213, and **Gautam Iyer** and **Arghir Zarnescu**. *Dynamical aspects of the cubic instability in the Landau-de Gennes energy for nematic liquid crystals.*

We consider a four-elastic-constant Landau-de Gennes energy characterizing nematic liquid crystal configurations. It is known that certain physical considerations require the presence of a cubic term, which nevertheless makes the energy unbounded from below. We study the dynamical effects produced by the gradient flow generated by this energy. We work mostly in dimension two and provide an understanding of the relations between the physicality of the initial data and the global well-posedness of the system. (Received July 27, 2013)

1