

1112-35-511 **Eugene Gartland*** (gartland@math.kent.edu), Department of Mathematical Sciences, Kent State University, P.O. Box 5190, Kent, OH 44242-0001. *Scalings and Limits of the Landau-de Gennes Model for Nematic Liquid Crystals*. Preliminary report.

Stationary points of the Landau-de Gennes free-energy functional give equilibria of the tensor order parameter that characterizes the state of orientational order in a liquid crystal material. This mesoscopic, phenomenological model plays a role in the theory of liquid crystals similar to that of the Ginzburg-Landau model in superconductivity. Some recent analytical papers have explored the behavior of this model in certain extreme ranges of the material parameters. We suggest an interpretation of these limits, based on dimensional analysis and scalings. (Received August 10, 2015)