1014-34-911   **Arup Mukherjee*** (`mukherjeea@mail.montclair.edu`), Department of Mathematical Sciences, Montclair State University, Montclair, NJ 07043, and **Bagisa Mukherjee**. *Stability of solutions for shearing flow of nematic liquid crystals under an external field.*

We consider a simple shearing flow of nematic liquid crystals between parallel plates under the influence of an external magnetic field. It is known that for shearing flows of nematic liquid crystals (without the external field), there is a non uniqeness of solutions which satisfy the continuum equations of Ericksen and Leslie. We consider this problem when the liquid crystal sample is influenced by an external magnetic field. Linear perturbations of in-plane solutions are used to categorize the stable solutions and we study the effect of varying the applied external field. (Received September 26, 2005)