Computational Mathematics Seminar Series

Eigenvalue preservation for the Beris-Edwards system modeling nematic liquid crystals

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Assistant Professor

Digital Media Center 1034
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Abstract:

The Beris-Edward equations are a hydrodynamic system modeling nematic liquid crystals in the setting of Q-tensor order parameter. Mathematically speaking it is the incompressible Navier-Stokes equations coupled with a Q-tensor equation of parabolic type.

In this talk we first consider the simplified Beris-Edward system that corresponds to the co-rotational case, and study the eigenvalue preservation property for the initial Q-tensororder parameter. Then we show that for the full system that relates to the non-rotational case, this property is not valid in general.

Speaker's Bio:

Xiang Xu received his PhD. degree in mathematics at the Pennsylvania State University in 2011. Then he worked as a postdoctoral associate at Center for Nonlinear Analysis at Carnegie Mellon University between 2011-2014. Next he worked as a visiting assistant professor at Purdue University between 2014-2015. He started to work as a tenure track assistant professor in the Department of Mathematics and Statistics at Old Dominion University from Fall 2015. His main research fields lie in PDE analysis in complex fluids models, and optimal transport.

This lecture has refreshments @ 03:00 pm

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