

Abstract Submitted
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Examining Correlation between Information Entropy and Thermodynamic Entropy in Liquid Crystal¹ JIAJING GUAN, JOHN CRESSMAN, George Mason University — Here we report on experiments in electroconveciting liquid crystals where we acquired data that enabled the simultaneous calculation of the information and thermodynamic entropy. Although most theories are based in thermodynamic entropy, information entropy is often easier to ascertain. Therefore, we aimed to test whether information entropy could be used as a surrogate for thermodynamic entropy. Our initial investigations established that both entropy measures have related fluctuations during large transitions. We have further examined the dependence of information and thermodynamic entropy on driving voltages. Finally, we have studied the correlation between temporal fluctuations in information and thermodynamic entropy while the crystal is driven in a steady state.

¹Rory Cerbus, and David Patrick

Jiajing Guan
George Mason University

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