

# **Generalised solutions to the Ericksen–Leslie model describing liquid crystal flow**

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The Ericksen–Leslie model is a system of partial differential equations describing the flow of nematic liquid crystals. These materials are nowadays very popular due to their prominent applications in liquid crystal displays.

In this talk, I am going to present the main results of my PhD thesis. In comparison with previous work in this field, the Ericksen–Leslie model is equipped with physical relevant free energies. Depending on the chosen free energy, different concepts of generalised solutions are presented, for example weak and measure-valued solutions. To demonstrate that the presented solution concepts are meaningful generalisation, they are studied with respect to their weak-strong uniqueness.