

Global existence and regularity of solutions for the active liquid crystal system

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We consider the active hydrodynamics, described by the Q-tensor liquid crystal framework. We prove the existence of global weak solutions in dimensions two and three with suitable initial data, and obtain the higher regularity of the weak solutions and the uniqueness of weak-strong solutions in dimension two.

This is joint work with Gui-Qiang Chen, Apala Majumdar, and Rongfang Zhang.

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