

Growth of Sobolev norms for coupled lowest Landau level equations and multi-solitons

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Abstract

We study coupled systems of nonlinear lowest Landau level equations, for which we prove global existence results with polynomial bounds on the possible growth of Sobolev norms of the solutions. We also exhibit explicit unbounded trajectories which show that these bounds are optimal. In a second time, we show the existence of multi-solitons with an exponentially localised error term in space, and then we prove a uniqueness result.

This is a joint work with Valentin Schwinte (Université de Lorraine).