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Title: On some regularization for (focusing) nonlinear Schrödinger equations

Abstract:
The nonlinear Schrödinger (NLS) equation arises as an effective model in many contexts, such as condensed matter physics or wave propagation in weakly dispersive media. It is well known that in some physically relevant cases the equation may experience the formation of singularities at finite time. This means that somehow the NLS model ceases to be a faithful description of the phenomena under consideration close to the singularity. This leads physicists to consider some augmented versions of the focusing NLS, where the additional terms in the equation describe phenomena which become relevant for high amplitudes of the solution. In this talk I will review some of those models and prove the global well-posedness for the associated Cauchy problems.