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## DK Seminar

November 19, 2014, 13:45 - 15:00

TU Vienna, 'Freihaus', green area, 4th floor, SEM 101C

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### **On the nonlinear (in-)stability of the NLS soliton for the Davey-Stewartson system**

The 1-d cubic nonlinear Schrödinger equation (NLS) has the special solution  $\sqrt{2}e^{it}(\cosh x)^{-1}$ , which is called the isolated soliton. There are many results about the nonlinear stability or instability of this solution for the 1-d or 2-d cubic NLS. The Davey-Stewartson system (DS) is a two dimensional perturbation of the 1-d cubic nonlinear Schrödinger equation, so it is interesting to study the nonlinear (in-)stability of this soliton under time evolution of this two dimensional model.

In this talk, I will present some known results about the Davey-Stewartson system, the nonlinear (in-)stability of the isolated soliton and I will discuss some open questions.