



## DK Seminar

October 28, 2015, 13:30 - 15:00

University of Vienna (UniVie): Oskar-Morgenstern-Platz 1, WPI, 8th floor, Seminarroom.

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### Global solutions of elliptic-elliptic Davey-Stewartson system and perturbed system.

**Abstract:** In the theory of water waves occurs the Davey-Stewartson systems which is a 2D generalisation of the usual cubic 1D Schrödinger equation. The well-posedness of Davey-Stewartson systems was studied by many authors such as in [GS90], [HH97], [LP93], [Hay97] ...

In this talk, I first recall some of these results about global solution of elliptic-elliptic (E-E) Davey-Stewartson system. Then, I present some of our recent results on this problem for both (E-E) Davey-Stewartson system and its perturbation by a line soliton.

#### REFERENCES

- [GS90] Jean-Michel Ghidaglia and Jean-Claude Saut. On the initial value problem for the Davey-Stewartson systems. *Nonlinearity*, 3(2):475–506, 1990.
- [Hay97] Nakao Hayashi. Local existence in time of solutions to the elliptic-hyperbolic Davey-Stewartson system without smallness condition on the data. *J. Anal. Math.*, 73:133–164, 1997.
- [HH97] Nakao Hayashi and Hitoshi Hirata. Local existence in time of small solutions to the elliptic-hyperbolic Davey-Stewartson system in the usual Sobolev space. *Proc. Edinburgh Math. Soc. (2)*, 40(3):563–581, 1997.
- [LP93] Felipe Linares and Gustavo Ponce. On the Davey-Stewartson systems. *Ann. Inst. H. Poincaré Anal. Non Linéaire*, 10(5):523–548, 1993.