

**Rémi Carles.** *Log a la joie*

La non-linéarité logarithmique change profondément la dynamique de l'équation de Schrödinger : la dispersion est accélérée, les normes de Sobolev de toutes les solutions croissent au cours du temps, et il existe un profil universel gaussien. Après avoir esquissé les preuves de ces phénomènes, nous évoquerons des conséquences concernant la mécanique des fluides compressibles dans le cas isotherme, ainsi que quelques généralisations.

**David Chiron.** *TBA*

**Thomas Kappeler.** *Large KAM tori for arbitrary semi-linear perturbations of the defocusing NLS equation*

We prove that small, semi-linear perturbations of the defocusing NLS equation on the circle have an abundance of invariant tori of arbitrary finite dimension and arbitrary size which support quasi-periodic solutions. The perturbations are assumed to be of finite regularity, but otherwise arbitrary. In particular they might depend on the space variable. The proof is based on a Newton-Nash-Moser iteration scheme to construct the invariant tori for the perturbed equation and uses that the defocusing NLS equation admits global Birkhoff coordinates. This is joint work (to appear in *Astrisque*) with Massimiliano Berti and Riccardo Montalto.

**Christian Klein** *On the Davey-Stewartson II system* The Davey-Stewartson (DS) system appears in the context of many two-dimensional situations, for instance in hydrodynamics and nonlinear optics. We address here the hyperbolic-elliptic system which is integrable for a particular choice of the parameters. A numerical study is presented indicating that blow-up is only possible for the integrable case, and that it is asymptotically of the same type as an explicitly known blow-up solution to DS II by Ozawa. We address the appearance of dispersive shock waves in the DS II solutions and discuss the semiclassical limit. The integrable case is treated via an inverse scattering approach.

**Pierre Raphaël.** *Blow up anisotrope*

**Lionel Rosier.** *Control of a Boussinesq system of KdV-KdV type on a bounded interval*

We consider a Boussinesq system of KdV-KdV type introduced by J. Bona, M. Chen and J.-C. Saut as a model for the motion of small amplitude long waves on the surface of an ideal fluid. This system of two equations can describe the propagation of waves in both directions, while the single KdV equation is limited to unidirectional waves. We are concerned here with the exact controllability of the Boussinesq system by using some boundary controls. By reducing the controllability problem to a spectral problem which is solved by using the Paley-Wiener method, we determine explicitly all the critical lengths for which the exact controllability fails for the linearized system, and give a complete picture of the controllability results with one or two boundary controls of Dirichlet or Neumann type. The extension of the exact controllability to the full Boussinesq system is derived in the energy space in the case of a control of Neumann type.

It is obtained by incorporating a boundary feedback in the control in order to ensure a global Kato smoothing effect. This is a joint work with Roberto Capistrano-Filho (UFPE) and Ademir Pazoto (UFRJ).