

On the quasi-linear Schrödinger equation on the circle

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I will discuss local in time well-posedness for a large class of quasi-linear Hamiltonian, or parity preserving, Schrödinger equation on the circle. Using para-differential tools I show that the system can be reduced to another one with symbols which, at the positive order, are constant and purely imaginary. This allows to obtain a priori energy estimates on the Sobolev norms of the solution. Time permitting I will present a recent result in which I prove long time existence and stability of the solutions.

These are joint works with Roberto Feola.