1139-35-574　　　　　**Emma Previato***, Department of Mathematics and Statistics, Boston University, Boston, MA 02215. *NLS as an infinite dimensional ACI.* Preliminary report.

P.Deift, F. Lund and E. Trubowitz gave a continuous Hamiltonian model for the non-linear Schrödinger equation and other integrable PDEs (Comm. Math. Phys. 1980) and we adapted their identities to construct a finite-dimensional, algebraically completely integrable (ACI) Hamiltonian system which provides algebro-geometric solutions to sine-Gordon, as Abelian functions over a curve C (Phys. D 1986). Motivated by recent work by T. Kappeler and P. Topalov on differentials over curves of infinite genus, with applications to solving the focusing NLS (J. Diff. Geom. 2017), we adapt the ACI model to curves of infinite genus and their Abelian functions. In principle, these functions should give solutions to both defocusing and focusing cases, but technical conditions for convergence need to be verified. (Received February 19, 2018)