MARIA NTEKOUME, Concordia University

Symplectic non-squeezing for integrable PDEs: the KdV equation on the line

Gromov's symplectic non-squeezing theorem asserts that a smooth symplectomorphism cannot map a ball wholly inside a thinner cylinder. In this talk we will review methods to obtain infinite-dimensional analogues of this theorem for Hamiltonian PDEs. In particular, we will prove that the KdV flow on the line cannot squeeze a ball in $\dot{H}^{-\frac{1}{2}}(\mathbb{R})$ into a cylinder of lesser radius. If time permits, further applications of this method to other completely integrable PDEs will be discussed.