1077-35-1784 **Aaron Hoffman***, Olin College, 1000 Olin Way, Needham, MA 02492. *Stability analysis via Backlund transform in completely integrable PDE.*

The many symmetries of completely integrable PDE give rise to classical techniques such as the Backlund transform for generating a new solution from a known solution. The Backlund transform is particularly useful in the study of soliton and multi-soliton solutions as the zero solution is related to a soliton via Backlund transform and in general the (n-1)-soliton is related to the n-soliton via Backlund transform. In recent years, the Backlund transform has been used to obtain stability results for solitons and multi-solitons across a wide range of completely integrable systems. We discuss recent stability results for the Toda lattice and the sine-Gordon equation. (Received September 20, 2011)