

1058-35-256

Stephen Anco* (sanco@brocku.ca), Brock University, Department of Mathematics, St Catharines, Ontario L2S3A1, Canada. *Bi-Hamiltonian geometric curve flows in semi-simple Klein geometries*. Preliminary report.

Recent work has given a general geometrical derivation of group-invariant (multicomponent) generalizations of mKdV, NLS, and SG soliton equations along with their bi-Hamiltonian structure, symmetries, and conservation laws. The derivation uses a moving frame formulation of non-stretching curve flows in semi-simple Klein geometries (i.e. Riemannian and Lorentzian symmetric spaces).

In this talk I will describe some examples of new scalar/vector soliton equations derived by this method. I will also present an explicit bi-Hamiltonian formulation of the underlying curve flows themselves, in terms of the geometric structure of a semi-simple Klein geometry. (Received February 16, 2010)