1048-35-364   **Stephen Anco*** (`sanco@brocku.ca`), Department of Mathematics, Brock University, St. Catharines, Ontario L2S3A1, Canada. *Klein geometry, group invariant soliton equations, and bi-Hamiltonian geometric curve flows.*

The sine-Gordon (SG) equation, modified Korteweg-de Vries (mKdV) equation, and nonlinear Schrodinger (NLS) equation each have a remarkable geometric origin connected with the classical frame structure equations for curve flows in S^2, R^2, and R^3, respectively. In this talk I will describe a broad generalization of these results to the setting of curve flows in Klein geometry, which gives a geometrical derivation of group-invariant (multicomponent) generalizations of mKdV, NLS, and SG soliton equations along with their bi-Hamiltonian structure, symmetries, and conservation laws. As one example, new scalar/vector quaternion soliton equations will be presented. (Received February 10, 2009)