1011-37-201   **Wen-Xiu Ma*** (`mawx@cas.usf.edu`), Department of Mathematics, University of South Florida, 4202 E Fowler Avenue, Tampa, FL 33620-5700. *Hamiltonian Structures of Constrained Flows.*

A Hamiltonian formulation for constrained flows generated from spectral problems of soliton equations is presented. The general theory is applied to a degenerate matrix spectral problem associated with matrix AKNS nonlinear Schrödinger (AKNS-NLS) equations. The potential constraints resulting from the adjoint symmetry constraints decompose the underlying matrix AKNS-NLS equations into finite-dimensional Liouville integrable Hamiltonian systems. (Received August 26, 2005)