Abstract Submitted
for the DFD10 Meeting of
The American Physical Society

Hamiltonian-Dirac Simulated Annealing: Application to the Calculation of Vortex States P.J. MORRISON, The University of Texas at Austin, G.R. FLIERL, Massachusetts Institute of Technology — A simulated annealing method for calculating stationary states for models that describe continuous media is proposed. The method is based on the noncanonical Poisson bracket formulation of media, which is used to construct Dirac brackets with desired constraints, and symmetric brackets that cause relaxation with the desired constraints. The method is applied to two-dimensional vortex dynamics and a variety of numerical examples are given, including the calculation of monopole and dipole vortex states.

P.J. Morrison
The University of Texas

Date submitted: 10 Aug 2010 Electronic form version 1.4