## Abstract Submitted for the DPP16 Meeting of The American Physical Society

On Hamiltonian Magnetohydrodynamics: Lagrangian, Eulerian, and Dynamically Accessible Stability - Applications with Translation Symmetry<sup>1</sup> P. J. MORRISON, Physics Department and IFS, The University of Texas at Austin, T. ANDREUSSI, Alta S.p.A., Pisa, 56121, Italy, F. PE-GORARO, Dipartimento di Fisica E. Fermi, Pisa, 56127, Italy — In a series of papers<sup>†</sup> we have investigated general properties of equilibria and their stability in each of the Lagrangian, Eulerian, and Dynamically Accessible stability formulations of magnetohydrodynamics. In our latest work we compare and contrast stability results with these formulations for two applications: stratified convection and rotating pinch equilibrium configurations. The former example, emphasizes the role played entropy, while the later demonstrates the utility of a relabeling transformation that we introduced in our earlier work. Comparisons to classical works, in particular on interchange instability, are made.

<sup>†</sup> T. Andreussi, P. J. Morrison, and F. Pegoraro, Phys. Plasmas, submitted (2016); ibid. **22**, 039903 (2015); ibid. **20**, 092104 (2013); ibid. **19**, 052102 (2012), and Plasma Phy. Control. Fusion **52**, 055001(2010).

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