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A class of action principles for magnetofluid models with gyroviscosity[1] P.J. MORRISON, Physics Department and IFS, The University of Texas at Austin — Early work[2] that generalized Newcomb's earlier work on action principles[3] for incompressible gyrofluids is revisited in light of recent work.[4] It is shown how noncanonical Poisson brackets for gyrofluids[5] are obtained from action principles and, in particular, the relationship to Braginskii's equations is described. It is also shown how action principles can be used to derive reduced fluid models, ones with concomitant Hamiltonian structure and invariants.

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