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abstract	We use the framework of generalised global symmetries to study various hydrodynamic regimes of hot electromagnetism. We formulate the hydrodynamic theories with an unbroken or a spontaneously broken U(1) one-form symmetry. The latter of these describes a one-form superfluid, which is characterised by a vector Goldstone mode and a two-form superfluid velocity. Two special limits of this theory have been studied in detail: the string fluid limit where the U(1) one-form symmetry is partly restored, and the electric limit in which the symmetry is completely broken. The transport properties of these theories are investigated in depth by studying the constraints arising from the second law of thermodynamics and Onsager's relations at first order in derivatives. We also construct a hydrostatic effective action for the Goldstone modes in these theories and use it to characterise the space of all equilibrium configurations. To make explicit contact with hot electromagnetism, the traditional treatment of magnetohydrodynamics, where the electromagnetic photon is incorporated as dynamical degrees of freedom, is extended to include parity-violating contributions. We argue that the chemical potential and electric fields are not independently dynamical in magnetohydrodynamics, and illustrate how to eliminate these within the hydrodynamic derivative expansion using Maxwell's equations. Additionally, a new hydrodynamic theory of non-conducting, but polarised, plasmas is formulated, focusing primarily on the magnetically dominated sector. Finally, it is shown that the different limits of one-form superfluids formulated in terms of generalised global symmetries are exactly equivalent to magnetohydrodynamics and the hydrodynamics of non-conducting plasmas at the non-linear level.Comment: v3: 69 + 1 pages, 1 figure, added clarifications and appendix with discrete symmetries, to be published in JHE	**abstract**	We use the framework of generalised global symmetries to study various hydrodynamic regimes of hot electromagnetism. We formulate the hydrodynamic theories with an unbroken or a spontaneously broken U(1) one-form symmetry. The latter of these describes a one-form superfluid, which is characterised by a vector Goldstone mode and a two-form superfluid velocity. Two special limits of this theory have been studied in detail: the string fluid limit where the U(1) one-form symmetry is partly restored, and the electric limit in which the symmetry is completely broken. The transport properties of these theories are investigated in depth by studying the constraints arising from the second law of thermodynamics and Onsager's relations at first order in derivatives. We also construct a hydrostatic effective action for the Goldstone modes in these theories and use it to characterise the space of all equilibrium configurations. To make explicit contact with hot electromagnetism, the traditional treatment of magnetohydrodynamics, where the electromagnetic photon is incorporated as dynamical degrees of freedom, is extended to include parity-violating contributions. We argue that the chemical potential and electric fields are not independently dynamical in magnetohydrodynamics, and illustrate how to eliminate these within the hydrodynamic derivative expansion using Maxwell's equations. Additionally, a new hydrodynamic theory of non-conducting, but polarised, plasmas is formulated, focusing primarily on the magnetically dominated sector. Finally, it is shown that the different limits of one-form superfluids formulated in terms of generalised global symmetries are exactly equivalent to magnetohydrodynamics and the hydrodynamics of non-conducting plasmas at the non-linear level.		
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