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Criteria for certain systems of PDEs to be Hamiltonian

A system of hydrodynamic type is a system of quasilinear first-order PDEs; the quasilinear nature, remarkably and beautifully, allows us to study such systems using finite-dimensional differential-geometric methods. To say such a system is Hamiltonian is to say that it is composed of some Poisson bracket and some Hamiltonian function. The motivating question is: given a system of hydrodynamic type, how can we determine whether or not it is Hamiltonian? We certainly can't test all Poisson brackets and all Hamiltonian functions! I'll present a recent answer to this question for systems of hydrodynamic type with three equations.