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*Hamiltonian systems of hydrodynamic type*

What does it mean for a system of PDEs to be Hamiltonian? I'll briefly review this idea before moving on to consider Hamiltonian systems of PDEs that are "of hydrodynamic type", in particular the construction of an interesting class of Poisson brackets for such systems. There are surprising connections here with Riemannian geometry, and I'll try to highlight these.