Hamiltonian Lie algebroids over Poisson manifolds

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Abstract:

Christian Blohmann and I, along with Stefano Ronchi, are continuing our study of hamiltonian Lie algebroids, extending now from symplectic manifolds to Poisson manifolds rather than presymplectic manifolds. Many of the basic ideas remain the same, but there are many new examples, including the cotangent Lie algebroid of a Poisson manifold.

The Poisson case is also the most appropriate setting to test (finally!) some ideas proposed by Alejandro Cabrera after a talk which I gave in Banff in 2017. These concern the possibility of interpreting the compatibility of a Lie algebroid structure, a connection, and a Poisson structure in terms of a naturally associated pair of Poisson structures on the dual of the Lie algebroid.

I will report on work in progress on these problems.