Tangent Lifts of bi-Hamiltonian Structures

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ABSTRACT

We construct several Poisson structures on the tangent bundle $TM$ to a Poisson manifold $M$ using the Lie algebroid structure on the cotangent bundle $T^*M$. We also show that bi-Hamiltonian structure from $M$ can be transferred to its tangent bundle $TM$. Moreover, we present how to find Casimir functions for those Poisson structures and we discuss some particular examples.

References