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Jets of foliations and b^k-Poisson structures

The b^k-tangent bundle, first introduced by Scott, is a Lie algebroid consisting of vector fields tangent to a hypersurface D to order k. Although this algebroid depends on the choice of a local defining function for D, all functions give rise to isotopic Lie algebroids. In this talk I will introduce a wider class of Lie algebroids that are locally of b^k-type but which are classified, up to isotopy, by a local system on D. These algebroids allow us to define a new class of Poisson structures which are symplectic away from D. I will discuss the properties of these Poisson structures and the ways they differ from ordinary b^k-Poisson structures. This is joint work with Álvaro del Pino and Aldo Witte.