Announcement

Seminar on Deformation Quantization and Geometry

15. 11. 2024 at 14 c.t.

Seminarroom SE 31

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Stability of orbits and differential graded Lie algebras

Given a geometric structure inducing a (singular) foliation on a manifold, and a leaf of the foliation, it is natural to ask when the leaf is preserved under deformations of the geometric structure.

In many cases (e.g. Poisson structures, Lie algebroids, Dirac structures...), this is a special case of the following question about differential graded Lie algebras (dgLa): when does the inclusion of a dg-Lie subalgebra of a dgLa induce a locally surjective map on Maurer-Cartan elements up to equivalence?

Under a finite-dimensionality assumption, which is only satisfied for zero-dimensional leaves, I have given a sufficient cohomological condition for a positive answer to the general question.

In this talk, I will discuss the result in the above-mentioned finite-dimensional setting, and report on some progress on dropping the finite-dimensionality assumption, the latter of which should provide a unified approach to the stability of leaves of more general structures, generalizing results of Marius Crainic and Rui Fernandes for Lie algebroids and Poisson manifolds.

Invited by Stefan Waldmann