BOSTON UNIVERSITY GEOMETRY SEMINAR

Chern characters and polyvector fields.

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Wednesday Sep. 28, 4-5 pm in MCS B21.
Tea 3:45-4 in MCS 144.

Abstract: Let M be a complex manifold (or a smooth algebraic variety over $\mathbb{C}$). The sheaf of holomorphic polyvector fields is a sheaf of Gerstenhaber algebras. Hence there is a Gerstenhaber algebra structure on its cohomology. There is a natural action by contraction of the sheaf of holomorphic differential forms on the sheaf of polyvector fields. It induces an action on cohomology, however a priori not necessarily compatible with the algebraic structures. M. Kontsevich claimed (without proof) that the odd Chern classes act as derivations of the commutative algebra structure. In fact, they act as derivations of the Gerstenhaber structure. I talk about a recent proof of this statement, joint with V. Dolgushev and C. Rogers. The proof uses (essentially) techniques from deformation quantization.