

ALGEBRA SEMINAR

A Deformation Complex for Modules over Deformation Quantization

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ABSTRACT: For a smooth affine variety, X , A. Yekutieli proved, following the seminal work of M. Kontsevich, that formal associative deformations of \mathcal{O}_X up to equivalence are in bijection with formal Poisson structures on X up to equivalence. Fixing a deformation quantization of \mathcal{O}_X , which we denote by \mathcal{A} , a natural problem is then to see which \mathcal{O}_X -modules can be deformed to \mathcal{A} -modules. We will construct a curved dg Lie algebra which controls deformations of \mathcal{O}_X -modules to \mathcal{A} -modules. We will then discuss first and second order deformations of modules which are locally free and supported on a smooth subvariety. If time permits we will discuss a possible solution for formal deformations of modules. Part of this work is joint with Vladimir Baranovsky and Victor Ginzburg.

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1:40 – 2:30 PM

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