

Oscillatory modules

Boris Tsygan (Northwestern U.)

We define an oscillatory module on a symplectic manifold as a module over a deformation quantization algebra with some extra properties. Intuitively, an oscillatory module is a module over the algebra of expressions $\exp(S(p, q)/ih)f(p, q, h)$. Another intuitive way to look these objects is to say that they are module over the deformation quantization of the NCG quotient of the symplectic manifold by all (quantized) symplectomorphisms. In the case of the standard two-torus, we compare the category of oscillatory modules to the Fukaya category, via the mirror symmetry result of Polishchuk and Zaslow.