

Index theorems for DQ-modules

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The study of \mathcal{D} -modules on a complex manifold M naturally leads to that of \mathcal{E} -modules (modules of microdifferential operators) on the cotangent bundle T^*M , then to the study of DQ-modules (deformation quantization modules) on a complex Poisson manifold X .

We shall study integral transformations for DQ-modules, that is, a non commutative version of the Fourier-Mukai transform.

Then, we define the Hochschild class of a DQ-module and prove that the Hochschild class commutes with the convolution of kernels.

We obtain more explicit results when X is symplectic and come back to \mathcal{D} -modules by considering the particular case $X = T^*M$.