Abstract

Inspired by the Fourier inverse theorem, Weyl discovered the famous quantization formula. The latter gives rise to the first example of deformation quantization, called the Moyal product, on the standard symplectic manifold R^2n. The foundation of deformation quantization was laid out by Flato-Lichnerowicz school in the late 1970's based on the Gerstenhaber theory of deformation of algebras. The quantization problem of arbitrary Poisson manifolds was completely solved by Kontsevich in 1997, who proved a much more powerful theorem: the so called Formality Theorem. The latter has opened up a new area of active research in mathematics, which is related to different areas of mathematics such as Lie theory and complex geometry. In this talk, we will give an introduction to the theory of deformation quantization, and describe a recent joint work with Hsuan-Yi Liao and Mathieu Stienon on Formality Theorem of DG-manifolds.