

Dg manifolds, formality theorem and Kontsevich–Shoikhet conjecture

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Dg manifolds (or Q-manifolds) are a useful geometric notion which unifies many important structures such as curved L_∞ algebras and derived intersections.

We will give an introduction to dg manifolds and its relation with derived differential geometry.

The Todd class of dg manifolds extends both the classical Todd class of complex manifolds and the Duflo element of Lie theory. We establish a formality theorem for finite-dimensional smooth dg manifolds. As an application, we prove the Kontsevich–Shoikhet conjecture: a Kontsevich–Duflo type theorem holds for all finite-dimensional smooth dg manifolds. The mini-course is based on joint works with Kai Behrend, Hsuan-Yi Liao and Mathieu Stiennon.