

Deformation Quantization

Vasily Dolgushev
Temple University

In this mini-course, I will introduce the Hochschild cochain complex of an associative algebra A and show in what sense it "governs" formal deformations of A . I will discuss algebraic structures on the Hochschild complex and formulate Kontsevich's formality theorem. I will show how Kontsevich's formality theorem allows us to classify formal deformations of the algebra of functions on the affine space. If time will permit, I will say a few words about the description of formal quantization procedures in terms of the Grothendieck-Teichmüller group.