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Mihai D Staic*, BGSU, Department of Mathematics and Statistics, Bowling Green, OH 43403.

Secondary Hochschild Cohomology.

For a B -algebra A , we study algebra deformations $A[[t]]$ that admit a B -algebra structure. The main idea is that a B -algebra structure on A gives a family of products that satisfies a certain generalized associativity condition. We use a Hochschild-like cohomology to describe deformations of this family of products. When $A[[t]]$ has an identity element, we get a B -algebra structure on $A[[t]]$. (Received January 08, 2014)