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Fusun Akman* (akmanf@ilstu.edu), Department of Mathematics, Illinois State University, Normal, IL 61790-4520. *On deformation theory of associative algebras and graph homology.*

Deformation theory of associative algebras and in particular of Poisson algebras is reviewed. The role of an "almost contraction" leading to a canonical solution of the corresponding Maurer-Cartan equation is noted. This role is reminiscent of the homotopical perturbation lemma, with the infinitesimal deformation cocycle as "initiator". Applied to star-products, we show how Moyal's formula can be obtained using such an almost contraction and conjecture that the "merger operation" provides a canonical solution at least in the case of linear Poisson structures. (Received November 01, 2006)