1112-18-160 **Cris Negron*** (negron@uw.edu). *Twisting Cochains and Hochschild Cohomology.*

Given a Koszul algebra A, there is a canonical dg algebra structure on the tensor product $A^! \otimes A$ so that the Hochschild cohomology ring of A is given as the cohomology $H^\bullet(A^! \otimes A)$, where $A^!$ is the Koszul dual of A. This result is a specific occurrence of a general phenomenon. Namely, given any "acyclic twisting cochain" $\pi : C \to A$ from a dg coalgebra C to a dg algebra A, we get an identification of graded rings between the Hochschild cohomology $HH^\bullet(A)$ and the cohomology of the "twisted hom complex" $\mathrm{Hom}^\pi(C, A)$. Examples of twisting cochains arise in topology (e.g. K.–T. Chen's twisting cochains for loop space homology) and ring theory (e.g. the canonical twisting cochain associated to a Koszul algebra). In this talk I will recall the definition of a twisting cochain and explain a bit about the aforementioned general result and its specific application to Koszul algebras. (Received July 30, 2015)