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Jerome Kaminker and **Xiang Tang*** (xtang@math.wustl.edu). *Hopf algebroids and secondary characteristic classes.*

In this talk we will describe a way to define characteristic classes for trivialized flat U_n bundle using Hopf-cyclic theory. It turns out that many of these classes extend to K-theory of certain C^* -algebras. This allows one to define a set of characteristic numbers, generalizing the relative eta invariant, which are homotopy invariant. (Received August 07, 2008)