YANLI SONG, University of Toronto

The Cubic Dirac Operator and Geometric Quantization

In this talk, I will reformulate the quantization of Hamiltonian G-spaces as push-forward of the Dirac element in K-homology of crossed product of C^*-algebras. After localization, we can artificially construct a Dirac operator which is a mixture of algebraic cubic Dirac operator and geometric Spin^c-Dirac operator. This will reduce the quantization commutes with reduction theorem to a easy case. By small calculation, we obtain a simplified proof to the theorem. I will also explain how to apply this method to the quasi-Hamiltonian G-spaces.