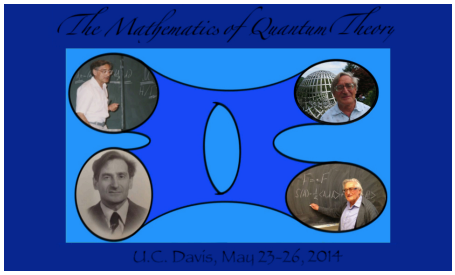

Contribution ID: **1** Type: **not specified**

The Hirzebruch-Riemann-Roch theorem in quantum K-theory

Monday 26 May 2014 09:15 (45 minutes)

The title theorem (which is a joint result of the speaker with Valentin Tonita)
expresses genus-0 K-theoretic Gromov-Witten invariants in terms of cohomological ones. The former are holomorphic Euler charactersistics of some interesting vector bundles over spaces of rational holomorphic curves in a given Kahler manifold, while the latter are suitable intersection indices in these spaces. The subject relies on many previous developments in Gromov-Witten theory, and is quite involved technically and conceptually. In this talk, we will focus on some relatively elementary aspect of the theory which, hopefully, has a general mathematical appeal. Namely, in contrast with the classical Hirzebruch-Riemann-Roch formula, the theorem in question is not a formula, but an example of what we call "adelic characterization". That is, generating functions for K-theoretic Gromov-Witten invariants (which happen to have the form of Laurent polynomials in one variable) are completely characterized by interpreting their Laurent series expansions near the poles at the roots of unity as generating functions for certain cohomological Gromov-Witten invariants.

Author: Prof. GIVENTAL, Alexander (U.C. Berkeley)

Presenter: Prof. GIVENTAL, Alexander (U.C. Berkeley)