

Topics in Geometry Seminar

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Introduction to Complex K-Theory II

Date: Monday, April 17, 2017

Time: 11:30 AM - 1:00 PM

Room: Math Lounge 307.20

Abstract:

This second talk on complex K-theory will contain two parts.

First we will continue our construction of the functors K^* , \tilde{K}^* . We will start with a brief summary of what has been done in the 1st talk. Then we will prove the isomorphism $\tilde{K}^0(X) \cong [X, BU \times \mathbb{Z}]$ for based spaces X . This result, together with the Bott Periodicity Theorem, will lead us to the definition of positive K -groups.

The second part will be devoted to computations. The first set of examples will be the K -groups of spheres. Next we will do the K -groups of the torus. For this we will need the long exact sequence of a pair. If time permits we will also compute the K groups of $\mathbb{C}P^n$. The computational tool for this will be the Atiyah-Hirzebruch spectral sequence.