

Geometry and Topology Seminar

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Monday, November 18th, 2013

HH3017 @ 2 p.m.

Model Categories and Homotopy Theory.

Abstract:

By definition a model category is an ordinary category with three classes of morphisms, called fibrations, cofibrations and weak equivalences, satisfying five axioms that are reminiscent of properties of topological spaces. These axioms are used to give an effective approach for the construction of localized categories, where the problem is to convert the class of weak equivalences, into isomorphisms. This localized category is identified with a homotopy category, whose morphisms are defined by equivalence classes of morphisms with respect to a certain homotopy relation determined by the model structure. In the first part of the talk we will discuss how the homotopy category of a model category is constructed and in the latter part of the talk we will see some results from classical homotopy theory that can/cannot be generalized in a model category context.