STRINGY TOPOLOGY
Cuernavaca, Mexico, 16-18 October 2006

Organized by MSRI, California, and Institute of Mathematics-Cuernavaca, UNAM.

SPEAKERS

Lecture Series
Ralph Cohen (Stanford University, U .S. A.)
Yongbin Ruan (University of Wisconsin-Madison, U. S. A.)
Alex Adem (University of British Columbia, Canada)

Invited Talks
Hugo Compean (Physics Department, CINVESTAV, Mexico)
Daniel Juan (Institute of Mathematics-Morelia, UNAM, Mexico)
Ernesto Lupercio (Mathematics Department, CINVESTAV, Mexico)
Jose Seade (Institute of Mathematics-Cuernavaca, UNAM, Mexico)
Miguel Xicotencatl (Mathematics Department, CINVESTAV, Mexico)

PROGRAM

All lectures will be held at the "Palapa Guillermo Torres" of the Institute of Mathematics of UNAM at Cuernavaca.

Monday 16
9:30 -   10:30 Registration
11:00 - 12:00 Adem
12:15 - 13:13 Ruan
15:30 - 16:30 Cohen
16:45 - 17:45 Xicotencatl

Tuesday 17
9:30 -   10:30 Lupercio
11:00 - 12:00 Adem
12:15 - 13:13 Ruan
15:30 - 16:30 Cohen
16:45 - 17:45 Juan

Wednesday 18
9:30 -   10:30 Seade
11:00 - 12:00 Adem
12:15 - 13:13 Ruan
15:30 - 16:30 Cohen
16:45 - 17:45 Compean

TITLES and ABSTRACTS

Alex Adem: "Cohomology, Twistings and K-theory of Orbifolds". ABSTRACT. In these lectures we will begin with an elementary review of classical orbifold invariants, after which we will discuss so–called stringy invariants. Among other topics we will discuss gerbes, discrete torsion and stringy products in the twisted K-theory of orbifolds.

Ralph Cohen: "String Topology".
ABSTRACT: In these lectures I will begin by recalling the basic structure on the homology of loop spaces and path spaces discovered by Chas and Sullivan. Further topics I will discuss will be taken from the following list: a homotopy theoretic perspective, relation with Hochshild (co)homology, fat graph models for moduli spaces, field theories, relation to the symplectic topology of cotangent bundles, and relationship with work of Freed, Hopkins, and Teleman on loop group representations.

Yongbin Ruan: "Orbifold cohomology and its computation".
ABSTRACT: In this short course, we will first introduce some basic objects of stringy orbifold theory such as inertia orbifold and higher moduli space of constant morphisms from Riemann surface. Then, we will use those geometric object to define orbifold cohomology ring. The most of time will be devoted to the method of computing orbifold cohomology ring such as deRham model for abelian orbifold and the representation theoretic technique for symmetric product.

Hugo Compean: T. B. A.

Daniel Juan: "Nil groups in Topology".

Ernesto Lupercio: "Orbifold string topology and virtual orbifold cohomology".
ABSTRACT. In this talk I will present my joint work with B. Uribe and M. Xicotencatl on orbifolds and string topology. After introducing our generalization for the orbifold case of the string topology of Chas and Sullivan I will introduce an interesting family of topological quantum field theories that appear by a localization procedure which we call virtual orbifold cohomology.

José Seade: "On contact structures on singularities-links".

Miguel Xicotencatl: "The loop orbifold of the symmetric product".