Submittee: Kristine Bauer
Date Submitted: 2009-08-24 09:25
Title: Alberta Topology Seminar Retreat
Event Type: Conference-Workshop

Location:
Goldeye Centre, Nordegg, AB.

Dates:
July 27 - 29, 2009

Topic:
Thom's classical cobordism and the Hodge conjecture

Methodology:
Two lecture series concerning aspects of the Hodge conjecture were offered. As well, other lectures discussed research interests of topologists in Western Canada. On the occasion of Sir Michael Atiyah's 80th birthday, Mike Hopkins announced the solution to the famous Kervaire invariant problem. The announcement was viewed at our meeting via video recording. Finally, there was time alloted for extensive discussion by participants.

Objectives Achieved:
The goal of the Alberta Topology Seminar (ATS) is to bring together researchers in topology in Alberta and neighboring provinces. The main objective of this meeting was to discuss the problem of representing homological cycles by orientation classes of manifolds in various forms. The discussion included Thom's work, Hodge's conjecture with some status report, and the recently introduced concept of 'holomorphic cobordism'.

Scientific Highlights:
Ryan Budney offered an extensive survey of R. Thom's work. Sadok Kallel presented recent work on the topology of holomorphic spheres in Grassmannians. George Peschke offered an introduction to concepts of relative complexification of a smooth manifold and holomorphic cobordism. A preliminary version of an expected manuscript of Dr. Peschke's work has been made available to conference participants.

Organizers:
--- Bauer, Kristine, Department of Mathematics and Statistics, University of Calgary --- Peschke, George, Department of Mathematical and Statistical Sciences, University of Alberta

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Speakers:

--- George Peschke, Department of Mathematical and Statistical Sciences, University of Alberta; (1) Homological cycles represented manifolds: Early history; (2) Hodge's Conjecture as a refinement of Steenrod's cycle representation question plus some status report; (3) Holomorphic cobordism and its relation to Chow groups. --- Ryan Budney, Mathematics and Statistics, University of Victoria. Survey on René Thom's work on cobordism and homological cycles represented by singular manifolds (Divided into parts I and II). --- Sadok Kallel, l'UFR de Mathematiques Pures et Appliquees, University Lille 1. The topology of holomorphic spheres in Grassmannians. --- Peter Zvengrowski, Department of Mathematics and Statistics, University of Calgary. The Dol'nikov Theorem, an Interplay of Combinatorics and Homotopy Theory.

Links:

http://www.ualberta.ca/dept/math/gauss/AAGT/