



Institute of Mathematical Research
HKU



Department of Mathematics
HKUST



Department of Mathematics and IMS
CUHK

Hong Kong Geometry Colloquium

November 21, 2009 (Saturday)

Room 210, Run Run Shaw Bldg., HKU

9:45 – 10:45am

Professor Weiping Zhang

Chern Institute of Mathematics, Nankai U., Tianjin, China
Geometric quantization on noncompact manifolds

10:45 – 11:45am

Dr. Dan Zaffran

KAIST, Daejeon, Korea
Euler's formula and (much) more

11:45am – 12:00noon

Tea Break

12:00noon – 1:00pm

Professor Baohua Fu

Institute of Mathematics, Chinese Academy of Sciences, Beijing, China
Hard Lefschetz conjectures on Chow groups

This meeting is hosted by the Institute of Mathematical Research, HKU.

All are Welcome

Hong Kong Geometry Colloquium
November 21, 2009 (Saturday)
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Professor Weiping Zhang

Chern Institute of Mathematics, Nankai U., Tianjin, China

Geometric quantization on noncompact manifolds

Abstract

The famous Guillemin-Sternberg conjecture can be summarized by the slogan “quantization commutes with reduction” (for compact symplectic manifolds). In this talk we will describe a joint work with Xiaonan Ma which shows that this slogan still holds for noncompact symplectic manifolds admitting Hamiltonian actions with proper moment map. The result resolves a conjecture made by Vergne in her ICM2006 plenary lecture.

Professor Dan Zaffran

KAIST, Daejeon, Korea

Euler's formula and (much) more

Abstract

A cube has $F = 6$ faces, $E = 12$ edges and $V = 8$ vertices. A pyramid with a square base has $F = 5$ faces, $E = 8$ edges and $V = 5$ vertices. Euler discovered in 1750 that for these two cases, or for any other polyhedron, $F - E + V = 2$. He published the result, but he confessed that he was not able to prove it! This celebrated “Euler's formula” is the starting point of many results and conjectures in higher dimensions. I will explain some of them, and focus on the surprising methods that have been used to solve these problems: topological manifolds and their algebraic topology, algebraic geometry...

Professor Baohua Fu

Institute of Mathematics, Chinese Academy of Sciences, Beijing, China

Hard Lefschetz conjectures on Chow groups

Abstract

We'll propose two conjectures of Hard Lefschetz type on Chow groups. Relations between them and conjectures of Bloch-Beilinson, of Murre, and of Beauville will be discussed.