



## A Conference in Honor of the 60th Birthday of Jochen Brüning

### **ZEIT:**

2.11.2007, 14:30 Uhr - 3.11.2007, 13:30 Uhr

### **ORT:**

HU-Berlin  
Unter den Linden 6  
Raum 3038 (Weierstrass Hörsaal)

### **PROGRAMM:**

#### **2.11.2007**

14:30 - 15:20 **Werner Ballmann**

#### **Remarks on joint work with Jochen Brüning**

15:30 - 16:20 **Matthias Lesch**

#### **Differential operators of Fuchs type**

I will review some of the work by Brüning, Seeley and myself on elliptic operators on manifolds with conic singularities. I will also mention some recent developments.

16:20 - 17:00 Kaffeepause

17:00 - 17:50 **Paolo Piazza**

#### **Rho invariants in topology and differential geometry**

Rho-invariants are secondary invariants of Dirac operators; the aim of this talk is to survey the basic results in the field, explain their interest and announce a few recent results about their generalization to the foliated context. More precisely, let  $G$  be a discrete group and let  $M$  be a closed oriented manifold with fundamental group  $G$ . I will consider various rho-invariants associated to the signature operator

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on  $M$  and to the Dirac operator (in the spin case) : the Atiyah-Patodi-Singer rho invariant, the Cheeger-Gromov rho-invariant and the delocalized rho-invariant of Lott. I will talk about the behavior of these rho-invariants under deformation of the metric, or of the differentiable structure or of the homotopy type of the manifold: rather surprisingly, this behavior depends on the nature of the fundamental group of the manifold and is radically different depending whether the group  $G$  has torsion or is torsion-free. In the last part of my talk I will move to measured foliations and announce recent results in collaboration with Moulay Benameur.

18:00 - 18:50 **Xiaonan Ma**

**Berezin-Toeplitz quantization and symplectic reduction**

As an application of our asymptotic expansion of the  $G$ -invariant Bergman kernel on a symplectic manifold with a Hamiltonian group action  $G$ , we study the Berezin-Toeplitz quantization under the symplectic reduction.

19:30 Conference Banquet

3.11.2007

8:30 - 9:00 Petit déjeuner

9:00 - 9:50 **Jean-Michel Bismut**

**The hypoelliptic Laplacian**

10:00 - 10:50 **Kenji Ueno**

**Conformal Field Theory and Modular Functor**

10:50 - 11:40 Brunch

11:40 - 12:30 **Sergey Dobrokhotov**

**Propagation of Gaussian wave packets in quantum thin periodic waveguides with nonlocal nonlinearity**

12:40 - 13:30 **Henri Moscovici**

**Index theory and Hopf algebra symmetry**

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