

Workshop on Noncommutative Geometry and String Theory

Keio University, Japan, March 16–22, 2001

The International Workshop will focus on recent topics in noncommutative geometry and string theory. The first two days, March 16-17, will be mainly devoted to survey lectures:

- (1) Prof. B. Tsygan: Noncommutative geometry and index theorem
- (2) Prof. P. Xu : Poisson manifolds and Lie algebroids

and introductory lectures on the theories of strings and branes:

- (3) Prof. Y. Matsuo : Introduction to D-branes for Mathematicians
- (4) Prof. C. Klimcik : Strings on Poisson-Lie groups
- (5) Prof. V. Schomerus : Strings, D-branes and non-commutative geometry

March 19-22 will include various invited talks related to these problems.

1. Location: The meeting will take place at the Faculty of Science and Technology, Keio University:

Hiyoshi 3-14-1, Kohoku-ku, Yokohama, 223-8825, Japan
Tel: +81-(0)45-566-1641, FAX: +81-(0)45-566-1642

The conference is held at the **14th building, seminar room #1** in the Yagami Campus.

2. Organization: The organizers are A. Weinstein (chairman), H. Omori, Y. Maeda, H. Moriyoshi, A. Yoshioka, and S. Watamura.

3. Date: March, 16 (Friday), 2001–March, 22 (Thursday), 2001

(We will have a break on March, 18(Sunday), 2001)

4. Program: A preliminary version of the program is attached at the end of this announcement. Updated versions can be seen at the home page: <http://www.tuhep.phys.tohoku.ac.jp/~watamura/workshop2001/>

5. Registration: If you would like to get a registration form, please send an e-mail directly to Y. Maeda at maeda@math.keio.ac.jp

6. Deadline: The deadline for registration is officially January 31.

7. Reception: On March 21, a reception will be held at 18:00pm, open to all participants.

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Preliminary Program (March,2001)

FRIDAY MARCH 16

Morning

1. P. Xu (Penn. St. Univ., USA) 9:30-10:30 “*Poisson manifolds and Lie bialgebroids (1)*”
2. P. Xu (Penn. St. Univ., USA) 11:00-12:00 “*Poisson manifolds and Lie bialgebroids (2)*”

Afternoon

1. Y. Matsuo (Tokyo Univ., Japan) 14:00-15:00 “*Introduction to D-branes for Mathematicians*”
2. B. Tsygan (Penn. St. Univ.,USA) 16:00-17:00 “*Noncommutative geometry and index theorems (1)*”
3. S. Kamimura (Keio Univ., Japan) 17:15-17:45 “*Coarse geometry and index theorem*”
4. M. Yano (Keio Univ., Japan) 17:45-18:00 “*TBA*”

SATURDAY MARCH 17

Morning

1. V. Schomerus (Potsdam,Germany) 9:30-10:30 “*Strings, D-branes and non-commutative geometry (1)*”
2. B. Tsygan (Penn. St. Univ.,USA) 11:00-12:00 “*Noncommutative geometry and index theorems (2)*”

Afternoon

1. V. Schomerus (Potsdam, Germany) 14:00-15:30 “*Strings, D-branes and non-commutative geometry (2)*”
2. C. Klimcik (Luminy Inst., France) 16:00-16:50 “*Strings on the Poisson-Lie groups*”
3. C. Klimcik (Luminy Inst., France) 17:00-17:50 “*Drinfeld double and the Verlinde formula*”
4. K. Furuuchi (KEK, Japan) 18:00-18:30 “*Topological charge of $U(1)$ instanton on noncommutative \mathbf{R}^4* ”

SUNDAY MARCH 18

NO TALKS

MONDAY MARCH 19

Morning

0. Opening 9:00-9:30
1. C. Klimcik (Luminy Inst., France) 9:30-10:30 “*Quasitriangular WZW model*”

2. T. Ratiu (Lausanne Univ., Switzerland) 11:00-12:00 “*Lagrangian reduction for nonholonomic systems*”

Afternoon

1. P. Lecomte (Liege, Belgium) 14:00-15:00 “*Towards natural projectively equivariant symbols*”
2. Y. Matsuo (Tokyo Univ., Japan) 15:30-16:30 “*Noncommutative soliton and its application to D-branes*”
3. H. Ishikawa (Tohoku Univ., Japan) 17:00-18:00 “*TBA*”

TUESDAY JANUARY 20

Morning

1. A. Cattaneo (Zurich Univ., Switzerland) 9:30-10:30 “*Poisson sigma model and deformation quantization (1)*”
2. P. Michor (Univ. Vienna, Austria) 11:00-12:00 “*Smooth \ast -algebras*”

Afternoon

1. V. Schomerus (Potsdam, Germany) 14:00-15:00 “*Fuzzy geometry, gluon condensation, and K-theory*”
2. Z. Liu (Peking Univ., China) 15:30-16:30 “*Dynamical r -matrices coupled with Poisson manifolds*”
3. U. Carow-Watamura and S. Watamura (Tohoku Univ., Japan) 17:00-17:30 “*Gauge theory on the quantum sphere*”
4. H. Bursztyn (UC, Berkeley, USA) 17:35-18:35 “*Semiclassical geometry of quantum line bundles and Morita equivalence of star products*”

WEDNESDAY MARCH 21

Morning

1. A. Cattaneo (Zurich Univ., Switzerland) 14:00-15:00 “*Poisson sigma model and deformation quantization (2)*”
2. S. Gutt (ULB, Belgium) 11:00-12:00 “*Traces in deformation quantization*”

Afternoon

1. S. Waldman (Univ. Friburg, Germany) 14:00-15:00 “*Deformation quantization of Hermitian vector bundles*”
2. H. Itoyama (Osaka Univ., Japan) 15:30-16:30 “*TBA*”
3. Y. Yamada (Kobe Univ., Japan) 16:45-17:45 “*TBA*”

Reception 18:00-20:00

THURSDAY MARCH 22

Morning

1. M. Kato (Tokyo Univ., Japan) 9:30-10:30 “*TBA*”
2. S. Bouarroudj (Keio Univ., Japan) 11:00-12:00 “*Schwarzian derivative related to the space of linear differential operators*”

Afternoon

1. H. Moriyoshi (Keio Univ., Japan) 14:00-15:00 “*Eta invariants, the Godbillon-Vey classes and the index theorem*”

2. Y. Sugawara (Tokyo Univ., Japan) 15:30-16:30 “*Wilson line in $SU(2)$ WZW model and Spherical D-brane*”
3. A. Weinstein (Univ. California, USA) 17:00-18:00 “*Leibniz algebras and reductive homogeneous spaces*”

Organized by :

Keio University