ABSTRACT. Poisson geometry provides a unified language for researchers working in various areas of mathematics, physics and engineering. The Poisson schools and conferences are major events organized on a two-year basis since 1998. They bring together leading experts and young researchers to address the important questions. Relying on previous experience we expect over 150 participants.

As in the previous editions, we plan publication of refereed proceedings for this major event. This year, the Poisson school and conference will also play the role of opening event of the Poisson semester at the Bernoulli center.

1. Scientific Summary

Poisson geometry is a classical 19th century subject (going back to the work of Poisson, Lie, and Hamilton) which has experienced a tremendous development in the past decades. It is now at the crossroads of several areas of pure and applied mathematics such as differential geometry, the calculus of variations, noncommutative algebra, representation theory, geometric mechanics, symmetric Hamiltonian bifurcation theory, and structure preserving numerical algorithms. Its impact on certain areas of theoretical physics and engineering has also been significant. Direct applications of Poisson geometry can be found nowadays in string theory, the theory of integrable systems, the theory of geometric phases, nonlinear control theory, nonholonomic mechanics, locomotion generation in robotics, and planetary mission design.

The fundamental structure of Poisson geometry goes back to classical mechanics on phase space. The properties of the Poisson bracket of functions are abstracted and put on a manifold. Symplectic manifolds and (pre)duals
of Lie algebras are special cases of Poisson manifolds. The interest for the general case stems from the fact that this abstract framework is particularly suitable for dealing with symmetries, for understanding quantization, and for studying various infinite-dimensional mechanical systems.

The aim of the Poisson schools and conferences is to bring together leading scientists and young researchers from different areas of mathematics, physics, and engineering with a common interest in Poisson geometry, its applications and its related fields which include

- Symmetries and moment maps,
- Geometric mechanics,
- Lie algebroids and Lie groupoids,
- Dirac geometry and generalized complex geometry,
- Geometric quantization and deformation quantization,
- Theory of integrable systems,
- Theory of nonholonomic systems,
- Gerbes and other higher structures.

The Poisson schools and conferences are major events organized on a two-year basis. Here is a list of the previous ones:

2000: CIRM, Luminy.
2004: University of Luxembourg.

In recent years many events closely related to Poisson geometry have been organized:

5. “Quantization in algebra and geometry” FIM, Zurich, January 6–9, 2003.
(15) July 2005, Three week summer school and conference at ICTP, Trieste.
(18) Séminaire Itinérant “Geometry and Physics.” This a sort of minor version of the Poisson conference. It takes place on one-year basis and usually lasts one week. It is mainly directed to younger researchers. Previous editions: Glanon, France (2003); Beijing + Kaifeng, China (2004); Perugia, Italy (2005); Hanoi, Vietnam (2006), Dakar, Senegal (2007).

2. Meeting Programme

The main objective of the proposed programme is to bring together leading experts and young researchers to encourage more interaction and cross fertilization between different fields. This is becoming more and more urgent as these fields progress deeper.

The school and the conference play a double role. First, they constitute the major bi-annual event in Poisson geometry and related areas. Second, they start off a six-month research programme at the Bernoulli Center of the EPFL *Poisson Geometry and Momentum Maps* coordinated by A. Alekseev (Geneva) and A. S. Cattaneo (Zürich).

In order to help young researchers to enter this vibrant area of geometry with wide ranging applications, the school is planned right before the conference. This preparation will help doctoral students and postdocs fully profit from the advanced talks at the conference which are always at the cutting edge of current research. Relying on previous experience we expect over 150 participants. We plan publication of refereed proceedings for this major event. More details can be found on the page http://www.math.uzh.ch/poisson2008/
3. CURRICA VITAE

3.1. Organizer 1: Anton Alekseev.

3.1.1. Personal information.
Name: Anton Alekseev
E-mail: alekseev@math.unige.ch
Address: Section of Mathematics, University of Geneva, 2-4 rue du Lièvre, c.p. 64, 1211 Genève 4, Switzerland

3.1.2. Fields of research.
Mathematical physics (conformal field theory, deformation quantization), Lie theory, symplectic and Poisson geometry.

3.1.3. Education.
1990–1991 Steklov Institute, St. Petersburg, Russia
Ph. D. in Mathematical Physics, received in 1991
1984–1991 St. Petersburg State University, Russia
M. Sc. in Physics

3.1.4. Work experience.
2001 - present Full Professor
Section of Mathematics, University of Geneva
2000 - present Full Professor
Institute for Theoretical Physics, Uppsala
1995 - 2000 Lecturer
Institute for Theoretical Physics, Uppsala

3.1.5. Visiting Postdoc positions.
2000 - 2001 Senior Fellow
Erwin Schrödinger Institute for Mathematical Physics, Vienna
1994 - 1995 Assistant
Institute for Theoretical Physics, ETH-Zürich
1993 - 1994 Postdoc
Institute for Theoretical Physics, Uppsala
1992 - 1993 Postdoc
Laboratory for Particle and High Energy Physics, University Paris-6
1991 - 1992 Junior researcher
Steklov Institute, St. Petersburg, Russia

3.1.6. Five selected publications in the last five years.


3.1.7. **Previous organizing experience.**

(1) Program “Applications of Integrability”, Erwin Schrödinger Institute for Mathematical Physics, Vienna, 1999.


(4) International Congress of Applied and Industrial Mathematics 2007, Zürich, member of the Program Committee.

(5) Strings 2008, Geneva, member of the local organizing committee

3.2. **Organizer 2: Alberto S. Cattaneo.**

3.2.1. **Personal information.**

Name: Alberto S. Cattaneo  
E-mail: alberto.cattaneo@math.uzh.ch  
(Address: [http://www.math.uzh.ch/cattaneo/](http://www.math.uzh.ch/cattaneo/))

3.2.2. **Fields of research.**

Mathematical physics (topological quantum field theories; BV formalism; deformation quantization), differential geometry (symplectic and Poisson geometry; Lie algebroids and Lie groupoids), algebraic topology (knot and manifold invariants).

3.2.3. **Education.**

11/91–11/94  
**Milan University, Italy**  
Ph. D. in Physics received 11/95

11/86–3/91  
**Milan University, Italy**  
Degree (laurea) in Physics

3.2.4. **Work experience.**

6/03–present  
**Full Professor**  
Mathematics Dept., Zurich University

1/98–5/03  
**Assistant Professor**  
Mathematics Dept., Zurich University
3.2.5. Visiting and postdoc positions.

3/05–5/05 I.H.E.S., visitor (on leave from Zurich)
9/01–12/01 Harvard University, visitor (on leave from Zurich)
6/98 Nantes University, visitor (on leave from Milan)
9/97–8/98 Milan University, Postdoc
9/95–8/97 Harvard University, Postdoc

3.2.6. Five selected publications in the last five years.


3.2.7. Previous organizing experience.

(1) “Quantization in algebra and geometry” FIM, Zurich, January 6–9, 2003; with G. Felder (ETHZ): http://www.math.ethz.ch/~felder/Workshop2003/
(2) “Groupoids and Stacks in Physics and Geometry” Mathematisches Forschungsinstitut Oberwolfach June 29–July 5, 2003; with P. Xu (PSU): http://www.mfo.de/cgi-bin/tagungsdb?type=21&tnr=0327a
(3) “Mathematical Aspects of String Theory” Centro Stefano Franscini on Monte Verità (Ascona, Switzerland), July 18–23, 2004; with A. Alekseev (Geneva), G. Felder (ETHZ) and J. Fröhlich (ETHZ): http://www.math.uzh.ch/string-theory
3.3. **Organizer 3: Tudor Ratiu.**

3.3.1. **Personal information.**
Name: Tudor S. Ratiu
E-mail: tudor.ratiu@epfl.ch (http://cag.epfl.ch)
Address: Section de Mathematiques, Station 8
Ecole Polytechnique Fédérale de Lausanne,
CH-1015 Lausanne, Switzerland

3.3.2. **Fields of research.**
Geometric mechanics, continuum mechanics, differential geometry (symplectic and Poisson geometry; Lie algebroids and Lie groupoids), Lie theory, Infinite dimensional geometry.

3.3.3. **Education.**

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<th>Degree/Course</th>
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<td>09/75–06/80</td>
<td>University of California at Berkeley, USA</td>
<td>Ph. D. in Mathematics received 06/80</td>
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<tr>
<td>09/73–06/74</td>
<td>University of Timișoara, Romania</td>
<td>MA in Mathematics</td>
</tr>
<tr>
<td>09/69–06/73</td>
<td>University of Timișoara, Romania</td>
<td>BA in Mathematics</td>
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3.3.4. **Work experience.**

<table>
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<tr>
<th>Period</th>
<th>Position</th>
<th>Institution</th>
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</thead>
<tbody>
<tr>
<td>07/98–present</td>
<td>Full Professor</td>
<td>Section de Mathématiques, Ecole Polytechnique Fédérale de Lausanne</td>
</tr>
<tr>
<td>06/88–03/01</td>
<td>Full Professor</td>
<td>Department of Mathematics, University of California, Santa Cruz</td>
</tr>
<tr>
<td>01/87–06/88</td>
<td>Associate Professor</td>
<td>Department of Mathematics, University of California, Santa Cruz</td>
</tr>
<tr>
<td>07/83–12/88</td>
<td>Associate Professor</td>
<td>Department of Mathematics, University of Arizona, Tucson</td>
</tr>
<tr>
<td>09/80–06/83</td>
<td>T.H. Hildebrandt Research Assistant Professor</td>
<td>Mathematics Dept., University of Michigan, Ann Arbor</td>
</tr>
</tbody>
</table>
3.3.5. Visiting and postdoc positions.

- **Fall 2006**: University of Padova, Italy
- **Spring 2005**: University of Haifa, Israel
- **Summer 2005**: Abdus Salam ICTP, Trieste, Italy
- **Summer 2003**: CNRS researcher, Institut Nonlinéaire de Nice, France
- **Summer 2003**: E. Schrödinger Institute, Vienna, Austria
- **Spring 2002**: Université de Paris VII, France
- **Summer 2002**: Mathematisches Institut, Technische Universität München, Germany
- **Summer 2001**: Mathematisches Institut, Technische Universität München, Germany
- **Summer 1999**: Mathematisches Institut, Technische Universität München, Germany
- **Summer 1997**: Keio University, Yokohama and RIMS Kyoto, Japan
- **Summer 1997**: University of Padova, Italy
- **Summer 1996**: Isaac Newton Institute, Cambridge, United Kingdom
- **Spring 1996**: Universidad Nacional del Sur, Bahia Blanca, Argentina
- **1994-95**: IHES, Bures-sur-Yvette, France
- **Spring 1995**: Weizmann Institute, Rehovot, Israel
- **Winter 1994**: MSRI, Berkeley, USA
- **Summer 1993**: E. Schrödinger Institute, Vienna, Austria
- **Winter 1993**: Fields Institute, Waterloo, Canada
- **Spring 1992**: Université de Paris VII, France
- **Summer 1990**: Max Planck Institute, Bonn, Germany
- **Spring 1990**: Université De Montpellier II, France
- **Fall 1989**: MSI, Cornell Univerity, USA
- **1988-89**: MSRI, Berkeley, USA
- **1984-87**: Department of Mathematics, University of California, Berkeley, USA, eight months of each year
- **Summer 1984**: Max Planck Institute, Bonn, Germany
- **Fall 1983**: Center for Nonlinear Studies, Los Alamos, USA

3.3.6. Five selected publications in the last five years.


3.3.7. Previous organizing experience.

(1) Current director of the Bernoulli Center of the EPFL.

(2) 1987-98, Executive Committee, Nonlinear Sciences Organized Research Unit, UC Santa Cruz.

(3) Conference *Geometry of Integrable Systems*, Hanoi University of Education, Vietnam, 09/04/07 – 13/04/07

(4) Program *Asymptotic Behavior in Fluid Mechanics*, Bernoulli Center, EPFL, 07/06 – 12/06


(8) Euroconference *MASIE 2004*, Bernoulli Center, EPFL.

(9) Program *Geometry of the Moment Map*, E. Schrödinger Institute, 08/03 – 11/03.

(10) Euroconference *PQR 2003*, Université Libre de Bruxelles, 06/03.

(11) Workshop *Mathematical Problems in Hydrodynamics*, 04/03.


(14) Special Session Organizer at the Annual AMS-MAA Joint Meeting, Baltimore, MD, January 1998.


(17) Symposium *Cornelius Lanczos Centennial Celebration*, North Carolina State, Univeristy, Raleigh, NC, December, 1993

4. **Provisional List of Proposed Speakers**

4.1. **Poisson school: July 1–4, 2008.** The Organizing Committee has selected the following four lecturers for the Poisson school:

- Marius Crainic (Univ. Utrecht)
- Giovanni Felder (ETH Zürich)
- Marco Gualtieri (MIT)
- Reyer Sjamaar (Cornell Univ.)

4.2. **Poisson conference: July 7–11, 2008.** Speakers of the Poisson conference are selected by the Scientific Committee consisting of Giovanni Felder (ETH Zürich), Janusz Grabowski (Polish Academy of Sciences), Simone Gutt (ULB and Univ. Metz), Yvette Kosmann-Schwarzbach (Ecole Polytechnique) Chair, Jiang-Hua Lu (Hong Kong Univ.), Yoshiaki Maeda (Keio Univ.), Eckhard Meinrenken (Univ. Toronto), Alan Weinstein (UC Berkeley), Ping Xu (Penn State Univ.), Nguyen Tien Zung (Univ. Toulouse).

The scientific committee is still working on the final invitation list which will consist of 25 speakers. The preliminary list of speakers is as follows:

- Henrique Bursztyn (IMPA, Rio de Janeiro)
- Vasiliiy Dolgushev (Northwestern Univ., Chicago)
- Boris Dubrovin (SISSA, Trieste)
- Pavel Etingof\(^1\) (MIT)
- Giovanni Felder (ETH, Zürich)
- Rui Loja Fernandes (IST, Lisbon)
- Vladimir Fock (ITEP, Moscow)
- Victor Ginzburg (Univ. Chicago)
- Nigel Hitchin (Univ. Oxford)
- Maxim Kontsevich (IHES)
- Bertram Kostant (MIT)
- Camille Laurent-Gengoux (Univ. Poitiers)
- Jiang-Hua Lu (Hong Kong Univ.)
- Kirill Mackenzie (Univ. Sheffield)
- Eckhard Meinrenken (Univ. Toronto)
- Shlomo Sternberg (Harvard Univ.)
- Xiang Tang (Washington Univ., St. Louis)
- Boris Tsygan (Northwestern Univ., Chicago)
- Pol Vanhaecke (Univ. Poitiers)
- Alan Weinstein (UC Berkeley)
- Milen Yakimov (UC Santa Barbara)
- Maxim Zabzine (Uppsala Univ.)
- Chenchang Zhu (Univ. Grenoble)

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\(^1\)To be confirmed
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