Final Report - CAST

Poisson 2010 - Poisson Geometry in Mathematics and Physics

IMPA, Rio de Janeiro, July 20-30, 2010.

The international meeting *Poisson 2010: Poisson Geometry in Mathematics and Physics* was held at the Instituto de Matemática Pura e Aplicada (IMPA), in Rio de Janeiro, Brazil, from July 20-30, 2010. The meeting hosted two main activities: the conference *Poisson 2010,* from July 26-30, featuring 23 plenary speakers and a poster session, and the *School on Poisson Geometry* the week before, July 20-23, featuring 4 minicourses aimed at graduate students and young researchers. The event had 145 registered participants (85 professors/postdocs, and 60 graduate students).

Poisson 2010 was the seventh event in a series of international conferences on Poisson geometry and related topics, which have been held every two years. The first meeting was in 1998 at the Banach Center, in Warsaw, with subsequent meetings at CIRM, Luminy (França) in 2000, IST, Lisbon, in 2002, University of Luxembourg in 2004, National Olympic Center in Tokyo in 2006, and Ecole Fédérale Polytechnique de Lausanne in 2008.

Just as the previous meetings, Poisson 2010 gathered mathematicians and physicists from different areas (both scientifically and geographically) with common interest in Poisson geometry. Holding the meeting in Rio de Janeiro was instrumental for the participation of many active research groups in Brazil and other countries of Latin America, allowing their interaction with researchers from Europe, Asia and North America.

The school and conference had an stimulating working atmosphere, which fostered new collaborations and opened research perspectives. Topics discussed in the meeting included: holomorphic Poisson geometry, generalized complex geometry, normal forms, supergeometry, vertex algebras and T-duality, Dirac structures, deformation quantization, homotopic algebras and operads, integrable systems, among others.

All the information concerning the events (including all abstracts) can be found at the following webpage:

http://www.impa.br/opencms/pt/eventos/store_old/evento_1005

Impact and publications: Lecture notes and slides of presentations will be soon available at the conference website. All talks at the conference have been videotaped and are already available online. Proceedings to the conference will be published in a special volume of the *Bulletin of the Brazilian Mathematical Society;* the editors of the proceedings are Henrique Bursztyn (IMPA), Rui L. Fernandes (IST, Lisbon), Alan Weinstein (Berkeley) and Jiang-Hua Lu (Hong Kong).

The next event of the series will be held in 2012 at the University of Utrecht, in the Netherlands.

Financial Support

The following brazilian agencies provided financial support:

Instituto Nacional de Matemática Pura e Aplicada (IMPA)
Instituto Nacional de Ciência e Tecnologia em Matemática (INCTMat)
Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq),
Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES),
Fundação de Amparo à Pesquisa do Estado do Rio de Janeiro (FAPERJ),
Fundação de Amparo à Pesquisa do Estado de São Paulo (FAPESP),
Programa Sul Americano de Apoio às Atividades de Cooperação em C&T - PROSUL-CNPq,
Programa de Excelência – PROEX-CAPES

The following international institutions provided financial support:

Commission on Development and Exchanges of the International Mathematical Union – CDE/IMU
European Science Foundation – CAST (Contact and symplectic topology) Network
European Science Foundation – ITGP (Interaction of low dimensional topology and geometry with
mathematical physics) Network
National Science Foundation, USA

Financial report - CAST

The CAST grant was used to cover the flight expenses of the following participants of Poisson 2010:

Eva Miranda (Barcelona), speaker	1 536,43 euros
Nguyen Tien Zung (Toulouse), speaker	1 158,61 euros
Yvette Kosmann-Schwarzbach (Paris), speaker	1 188,65 euros
David Martinez Torres (Lisbon), pos-doc	1 119,92 euros

TOTAL: 5 003,64 euros

Committees

Organizing Committee:

- Henrique Bursztyn (IMPA, Rio de Janeiro)
- Giuseppe Dito (U. Bourgogne, Dijon)
- Marcos Jardim (Unicamp, Campinas)
- Jair Koiller (FGV, Rio de Janeiro)
- Leonardo Macarini (UFRJ, Rio de Janeiro)

Advisory Committee:

- Anton Alekseev (Genève)
- Alberto S. Cattaneo (Zurich)
- Marius Crainic (Utrecht)
- Giuseppe Dito (Dijon)
- Giovanni Felder (ETH-Zurich)
- Janusz Grabowski (Warsaw)
- Simone Gutt (Brussels)
- Jiang-Hua Lu (Hong Kong)
- Yoshiaki Maeda (Keio)
- Nguyen Tien Zung (Toulouse)

Scientific Committee:

- Rui Loja Fernandes (IST, Lisbon)
- Eckhard Meinrenken (U. Toronto)
- Yvette Kosmann-Schwarzbach (Ecole Polytechnique)
- Tudor Ratiu (EPFL, Lausanne)
- Alan Weinstein (U. C. Berkeley)

Lectures and talks

School lecturers:

Gil Cavalcanti (Utrecht)
Holomorphic Poisson and generalized Kaehler structures

Alberto Cattaneo (Zurich)
Introduction to supermanifolds

Jiang-Hua Lu (Hong Kong)
Poisson Lie groups and Poisson homogeneous spaces

Ieke Moerdijk (Utrecht)
Introduction to Lie groupoids and Lie algebroids

School schedule:

	Tuesday 20	Wednesday 21	Thursday 22	Friday 23
10:00 ~ 11:00		Ieke Moerdijk	Ieke Moerdijk	Ieke Moerdijk
11:00 ~ 11:30		Coffee	Coffee	Coffee
11:30 ~ 12:30		Alberto Cattaneo	Alberto Cattaneo	Jiang~Hua Lu
12:30 ~ 14:00	13:00 - 14:00 Registration & Check in	Lunch		
14:00 ~ 15:00	Alberto Cattaneo	Gil Cavalcanti	Gil Cavalcanti	
15:00 ~ 15:30	Coffee	Coffee	Coffee	
15:30 ~ 16:30	Gil Cavalcanti	Jiang~Hua Lu	Jiang~Hua Lu	

Conference speakers:

Camilo Arias Abad (Zurich)
Differentiation and integration of representations up to homotopy

Anton Alekseev (Genève)
Deformation quantization and the Kashiwara-Vergne problem

Damien Calaque (Lyon)
From Lie theory to algebraic geometry and back

Marius Crainic (Utrecht)
A normal form theorem around symplectic leaves

Ezra Getzler (Northwestern)
The automorphism 3-group of the 2-groupoid of Poisson brackets on a manifold

Marco Gualtieri (Toronto)

Holomorphic Poisson geometry of generalized Kahler structures

Reimundo Heluani (IHES - IMPA)
Dilogarithms, chiral algebras and non-commutative windings

Yvette Kosmann-Schwarzbach (Palaiseau)
Poisson pairs revisited

Eckhard Meinrenken (Toronto)
Dirac structures and Dixmier-Douady theory

Sergei Merkulov (Stockholm)
Operads, configuration spaces and quantization

Eva Miranda (Barcelona)
Poisson geometry of b-manifolds

Tudor Ratiu (Lausanne)
Applications of Poisson geometry

Travis Schedler (MIT)
Poisson traces and D-modules on Poisson varieties

Pavol Severa (Bratislava)
Denominators of rational Drinfeld associators

Reyer Sjamaar (Cornell)
Hans Duistermaat's contributions to Poisson geometry

Mathieu Stienon (Paris)
Poisson Lie 2-groups

Xiang Tang (St. Louis)
Mackey Machine and Duality of Gerbes on Orbifolds

Bernardo Uribe (Bogota)
Symmetries of Exact Courant Algebroids

Izu Vaisman (Haifa)
Lie and Courant Algebroids on Foliated Manifolds

Stefan Waldmann (Freiburg)
Morita Theory in Deformation Quantization

Alan Weinstein (Berkeley)
Poor relations

Ping Xu (State College)
On the Atiyah class

Nguyen Tien Zung (Toulouse)
Local structure of integrable Hamiltonian systems on Poisson manifolds

Conference schedule:

	Monday 26	Tuesday 27	Wednesday 28	Thursday 29	Friday 30
9:00 ~ 10:00	Registration	Damien Calaque	Marco Gualtieri	Travis Schedler	Anton Alekseev
10:00 ~ 11:00	Opening	Mathieu Stienon	Xiang Tang	Stefan Waldmann	Camilo Arias Abad
11:00 ~ 11:30	Coffee				
11:30 ~ 12:30	Alan Weinstein	Marius Crainic	Sergei Merkulov	Ezra Getzler	Eckhard Meinrenken
12:30 ~ 14:30	Lunch				
14:30 ~ 15:30	Nguyen Tien Zung	Pavol Severa	Free	Reimundo Heluani	Tudor Ratiu
15:30 ~ 16:30	Eva Miranda	Yvette Kosmann-Schwarzbach		Bernardo Uribe	
16:30 ~ 17:00	Coffee			Coffee/Poster	
17:00 ~ 18:00	Izu Vaisman	Reyer Sjamaar		Ping Xu	
18:00	Reception				

Poster Session :

Anderson de Oliveira Assunção (UFMT, Brazil)
"About the NLS and DNLS hierarchies and the recursion operators associated to their bi(tri)-Hamiltonian structures",

Ivan Italo Gonzales Gargate and Paulo Ruffino (Unicamp)
"An averaging principle in a stochastic Hamiltonian system"

Nicolas Martinez and Alexander Cardona (Universidad de Los Andes)
"A Dirac structure on $\text{Diff}(S^1)$",

Paulo Henrique P. da Costa (Unicamp)
"Diffusion on Poisson manifolds",

Madeleine Jotz (EPFL)
"Dirac Lie groupoids, Dirac homogeneous spaces, and a theorem of Drinfel'd",

Nicolas Avilan and Rolando Roldan (Universidad de Los Andes)
"Effective action in higher dimensional Space-Time",

Flavio Cordeiro (Oxford) and Joana Nunes da Costa (Coimbra)
"Gauge transformations of Poisson quasi-Nijenhuis manifolds with background",

Sandra M. Z. Yepes and Michael Forger (USP)
"Generalized symplectic manifolds with lagrangian foliation",

Paulo Antunes (Coimbra)
"Jacobi structures in the supergeometric formalism",

Vladimir Gol'dshtein (Ben Gurion Univ.) and Stanislav Dubrovskiy (Northeastern Univ.)
"Lemma Poincare for L_\infty,loc-forms",

Stanislav Dubrovskiy (Northeastern University)
"Moduli space of general connections",

Vladislav Kupriyanov (USP)
"Polydifferetial approach to the construction of star products",

Pedro Lauridsen (USP)
"Poisson structures in classical field theory: an algebraic approach",

Pedro Rios (USP-São Carlos)
"Singularities of equidistants and Global Centre Symmetry sets of Lagrangian submanifolds"

Eduardo Hoefel (UFPR, Brazil) and Jim Stasheff (U. Penn.)
"Recognition of relative double loop spaces and the Swiss-Cheese Operad",

Antonio de Nicola (Coimbra, Portugal), J.C. Marrero and E. Padron (Universidad de La Laguna)
"Reduction of Poisson-Nijenhuis Lie algebroids",

Luis Garcia Naranjo (Ecole Polytechnique Fédérale de Lausanne)
"The motion of the hydrodynamic chaplygin Sleigh"

Nuno Romão (Jagellonian University)
"Vortices and Jacobian Varieties"

Martha Dussan (USP)
"Timelike Christoffel pairs in the split-quaternions":

List of participants

The events had 145 participants, including 40 from Brazil and 105 from other countries, as specified below:

Nome	Instituição Atual	Pais
Alfredo Hipólito Gonzalez	Facultad de Matemática, Astronomía y Física (FAMAF)	Argentina
Francisco Vittone	Universidad Nacional de Rosario	Argentina
Germán Zorba	Universidad Nac. de la Plata (UNLP)	Argentina
Marcela Zuccalli	Universidad Nac. de la Plata (UNLP)	Argentina
María Eugenia Garcia	Universidad Nac. de la Plata (UNLP)	Argentina
Matias del Hoyo	Universidad de Buenos Aires	Argentina
Maximiliano Palacios	Universidad Nacional del Sur (UNS)	Argentina
Silvio Reggiani	Universidad Nacional de Córdoba (FAMAF)	Argentina
Verónica Susana Diaz	Universidad Nacional de Córdoba (FAMAF)	Argentina
Yamile Godoy	Universidad Nacional de Córdoba (FAMAF)	Argentina
Abiel Costa Macedo	Universidade Federal de Pernambuco (UFPE)	Brasil
Anderson de Oliveira Assunção	Universidade Federal do Mato Grosso - Cuiabá (UFMT)	Brasil
Andrea Luiza Gonçalves Martinho	Universidade Federal do Rio de Janeiro (IM/UFRJ)	Brasil
Antonio Roberto da Silva	Universidade Federal do Rio de Janeiro (UFRJ)	Brasil
Augusto Marques Corner	Universidade Estadual do Norte Fluminense (UENF)	Brasil
Axel Winterhalder	Universidade Estadual do Maranhão (UEMARANHÃO)	Brasil
Carlos Pinheiro	Universidade Federal Rural do Rio de Janeiro (UFRRJ)	Brasil
Clayton de Lima	Universidade Federal Rural do Rio de Janeiro (UFRRJ)	Brasil
Cristian Ortiz Gonzalez	Instituto de Matematica Pura e Aplicada (IMPA)	Brasil
Dmitry Vasilevich	Universidade Federal do Abc (UFABC)	Brasil
Eduardo Outeiral Correa Hoefel	Universidade Federal do Paraná (UFPR)	Brasil
Fernando Antonio de Araujo	Instituto de Matematica Pura e Aplicada (IMPA)	Brasil

Carneiro		
Fernando del Carpio Marek	Instituto de Matematica Pura e Aplicada (IMPA)	Brasil
Flávio de Matos Silva	Instituto Politécnico do Rio de Janeiro (UERJ - IPRJ)	Brasil
Frank Michael Forger	Instituto de Matemática e Estatística (IME - USP)	Brasil
Henrique Bursztyn	Instituto de Matematica Pura e Aplicada (IMPA)	Brasil
Ivan Italo Gonzales Gargate	IMECC (UNICAMP)	Brasil
Jair Koiller	Fundação Getúlio Vargas (FGV)	Brasil
John Beiro Moreno Barrios	USP - Instituto de Ciências Matemáticas e Computação São Carlos (ICMCSC)	Brasil
Juliana Simões Chagas Licurgo	Universidade Estadual do Norte Fluminense (UENF)	Brasil
Leandro Aguiar Fernandes	Instituto Politécnico do Rio de Janeiro (UERJ - IPRJ)	Brasil
Leandro Tomaz de Araujo	Universidade Federal Rural do Rio de Janeiro (UFRRJ)	Brasil
Luiz Benicio Degli Esposte Rosa	Universidade Estadual do Norte Fluminense (UENF)	Brasil
Luiz Henrique Pereira Pêgas	Instituto de Matemática e Estatística (IME - USP)	Brasil
Marcelo Goncalves De Martino	IMECC (UNICAMP)	Brasil
Marcelo Ribeiro de Resende Alves	Instituto de Matemática e Estatística (IME - USP)	Brasil
Marco Cezar Barbosa Fernandes	Universidade de Brasilia (UNB)	Brasil
Martha P. Dussan Angulo	Instituto de Matemática e Estatística (IME - USP)	Brasil
Martim Lourenço de Oliveira Vieira	Centro Brasileiro de Pesquisas Físicas (CBPF)	Brasil
Martin de Borbon	Instituto de Matematica Pura e Aplicada (IMPA)	Brasil
Nazira Hanna Harb	USP - Instituto de Ciências Matemáticas e Computação São Carlos (ICMCSC)	Brasil
Paulo Guilherme Castro	Centro Brasileiro de Pesquisas Físicas (CBPF)	Brasil
Paulo Henrique Pereira da Costa	IMECC (UNICAMP)	Brasil
Pedro de M. Rios	USP - Instituto de Ciências Matemáticas e Computação São Carlos (ICMCSC)	Brasil
Pedro Lauridsen Ribeiro	Instituto de Matemática e Estatística (IME - USP)	Brasil
Ricardo, Kullock	Centro Brasileiro de Pesquisas Físicas (CBPF)	Brasil
Roberto Machado Velho	Universidade Federal do Rio de Janeiro (UFRJ)	Brasil
Sandra Maria Zapata Yepes	Instituto de Matemática e Estatística (IME - USP)	Brasil
Verônica Hildebrandt Saraiva	Centro Federal de Educação Tecnológica Celso Suckow da Fonseca (CEFET)	Brasil
Vladislav Kupriyanov	Instituto de Matemática e Estatística (IME - USP)	Brasil
Alejandro Cabrera	University of Toronto (UofT)	Canada
Brent Pym	University of Toronto (UofT)	Canada
Daniel Sean Fitzpatrick	Mount Allison University (MA)	Canada

Derek Krepski	Mcmaster University (MCMASTER)	Canada
Eckhard Meinrenken	University of Toronto (UofT)	Canada
Marco Gualtieri	University of Toronto (UofT)	Canada
Ruxandra Moraru	University of Waterloo (UW)	Canada
Travis Songhao Li	University of Toronto (UofT)	Canada
Jiang-Hua Lu	University of Hong Kong (UHK)	China
Oleksandra Lyapina	Chinese University of Hong Kong (CUHK)	China
Victor Mouquin	Chinese University of Hong Kong (CUHK)	China
Alexander Cardona	Universidad de Los Andes-Colombia (Uniandes)	Colombia
Andrés Vargas	Universidad de Los Andes-Colombia (Uniandes)	Colombia
Camilo Angulo	Universidad de Los Andes-Colombia (Uniandes)	Colombia
Juan Camilo Fiallo	Universidad de Los Andes-Colombia (Uniandes)	Colombia
Nicolás Avilán	Universidad de Los Andes-Colombia (Uniandes)	Colombia
Nicolas Martinez	Universidad de Los Andes-Colombia (Uniandes)	Colombia
Sebastian Montes Valencia	Universidad de Los Andes-Colombia (Uniandes)	Colombia
Sergio Adarve	Universidad de Los Andes-Colombia (Uniandes)	Colombia
Chiara Esposito	Copenhagen University (KU)	Denmark
Calaque, Damien	Université Claude Bernard Lyon 1 (UCBL)	France
Giuseppe Dito	Université de Bourgogne (U. DIJON)	France
Kosmann-Schwarzbach, Yvette	École Polytechnique	France
Mathieu Stienon	Université Paris VII - Jussieu (Paris VII)	France
Nguyen Tien Zung	Université Paul Sabatier - Toulouse (Toulouse 3)	France
Bernardo Uribe	Universitat Munster (UM)	Germany
Chenchang Zhu	University of Goettingen (UG)	Germany
Iakovos Androulidakis	Georg-August-Universitaet Goettingen (GUG)	Germany
Li, Du	University of Goettingen (UG)	Germany
Stefan Waldmann	Universitat Freiburg - Freiburg - Alemanha (UF)	Germany
Izu Vaisman	University of Haifa (HAIFA)	Israel
Kentaro Mikami	Akita University (AU)	Japan
Yoshiaki Maeda	Keio University (KU)	Japan
Marie-Amélie Lawn	Université du Luxembourg (UNI.LU)	Luxembourg
Martin Schlichenmaier	Université du Luxembourg (UNI.LU)	Luxembourg
ping xu	Université du Luxembourg (UNI.LU)	Luxembourg
Serge Roméo Tagne Pelap	Université du Luxembourg (UNI.LU)	Luxembourg
Boris Osorno Torres	University Utrecht (FCC)	Netherlands
Dmitry Roytenberg	Mathematisch Instituut Universiteit Utrecht (MIUtrecht)	Netherlands
Gil Ramos Cavalcanti	University Utrecht (FCC)	Netherlands
Ieke Moerdijk	Mathematisch Instituut Universiteit Utrecht (MIUtrecht)	Netherlands
Ioan Tiberiu Marcut	University Utrecht (FCC)	Netherlands
Ivan Struchiner	Mathematisch Instituut Universiteit Utrecht (MIUtrecht)	Netherlands

Maria Amelia Salazar	University Utrecht (FCC)	Netherlands
Marius Crainic	Mathematisch Instituut Universiteit Utrecht (MIUtrecht)	Netherlands
Janusz Grabowski	Institute of Mathematics, Polish Academy of Sciences (IMPAN)	Poland
Nuno Romão	Jagellonian University (UJ)	Poland
Antonio De Nicola	Univ. de Coimbra (UC)	Portugal
Brahic Olivier	Instituto Superior Técnico-Universidade Técnica de Lisboa (IST/UTL)	Portugal
David Martinez Torres	Instituto Superior Técnico- Universidade Técnica de Lisboa (IST/UTL)	Portugal
Florian Schätz	Instituto Superior Técnico-Universidade Técnica de Lisboa (IST/UTL)	Portugal
Joana Nunes da Costa	Univ. de Coimbra (UC)	Portugal
Joana Teles	Univ. de Coimbra (UC)	Portugal
João Nuno Mestre Fernandes da Silva	Univ. de Coimbra (UC)	Portugal
Juan Pablo Roggiero	Instituto Superior Técnico-Universidade Técnica de Lisboa (IST/UTL)	Portugal
Paulo Antunes	Univ. de Coimbra (UC)	Portugal
Pedro Walmsley Frejlich	Instituto Superior Técnico-Universidade Técnica de Lisboa (IST/UTL)	Portugal
Raquel Caseiro	Univ. de Coimbra (UC)	Portugal
Rui Loja Fernandes	Instituto Superior Técnico-Universidade Técnica de Lisboa (IST/UTL)	Portugal
Tiago Marques Fardilha	Universidade do Porto	Portugal
Misha Verbitsky	Institute for High Eneregy Physics, Protvino, Moscow Region (IHEP)	Russia
Blaz Jelenc	University of Ljubljana (UL)	Slovenia
David Iglesias Ponte	Consejo Superior de Investigaciones Cientificas (CSIC)	Spain
Eva Miranda	Universitat Politècnica de Catalunya (UPC)	Spain
Marco Zambon	Universidad Autónoma de Madrid (UAM)	Spain
Romero Barbieri Solha	Universitat Politècnica de Catalunya (UPC)	Spain
Sergei Merkulov	Stockholm University (SU)	Sweden
Alberto Cattaneo	Universitat Zurich (UZ)	Switzerland
Anton Alekseev	University of Geneva (UG)	Switzerland
Camilo Arias Abad	Universitat Zurich (UZ)	Switzerland
Ivan Contreras Palacios	Universitat Zurich (UZ)	Switzerland
Luis Garcia-Naranjo	Ecole Polytechnique Fédérale de Lausanne (EPFL)	Switzerland
Madeleine Jotz	Ecole Polytechnique Fédérale de Lausanne (EPFL)	Switzerland
Maria Podkopaeva	University of Geneva (UG)	Switzerland
Pavel Mnev	Universitat Zurich (UZ)	Switzerland
Pavol Severa	University of Geneva (UG)	Switzerland

Tudor Ratiu	Ecole Polytechnique Fédérale de Lausanne (EPFL)	Switzerland
Aaron McMillan	Uc Berkeley (UC)	United States of America
Aissa Wade	Pennsylvania State University (PSU)	United States of America
Alan Weinstein	University of California, Berkeley (UCB)	United States of America
Benoit Jubin	University of California at Berkeley (UCB)	United States of America
Chris Rogers	University of California, Riverside (UCR)	United States of America
Dario Beraldo	University of California at Berkeley (UCB)	United States of America
Ezra Getzler	Northwestern University (NWU)	United States of America
John Arlo Caine	University of Notre Dame (ND)	United States of America
Noah Kieserman	Bowdoin College (BC - MAINE)	United States of America
Rajan Mehta	Washington University, St. Louis (WUSTL)	United States of America
Reimundo Heluani	University of California at Berkeley (UCB)	United States of America
Renato Vianna	Uc Berkeley (UC)	United States of America
Reyer Sjamaar	Cornell University (CU)	United States of America
Sobhan, Seyfaddini	University of California, Berkeley (UCB)	United States of America
Stanislav Dubrovskiy	Northeastern University, Boston, Usa (NEU)	United States of America
Tomoo Matsumura	Cornell University (CU)	United States of America
Travis Schedler	Massachusetts Institute of Technology (MIT)	United States of America
Xiang Tang	Washington University, St. Louis (WUSTL)	United States of America