

Curriculum Vitae of Jiang-Hua Lu

PERSONAL INFORMATION:

Name: Jiang-Hua Lu
Position: Professor and Head, Department of Mathematics
Institution: The University of Hong Kong, Pokfulam Rd. Hong Kong
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EDUCATION:

- Ph.D, Department of Mathematics, University of California at Berkeley, (1985-1990). Dissertation director: Alan Weinstein.
- B.S., Department of Mathematics, Beijing University, Beijing, P.R. China, (1979-1983).

RESEARCH INTERESTS:

- Symplectic and Poisson geometry; Lie theory.

EMPLOYMENT:

- July 2007 - present: Professor, Department of Mathematics, University of Hong Kong;
- July 2002 - June 30, 2007: Associate Professor, Department of Mathematics, University of Hong Kong;
- May 1997 - July 2002: Associate Professor (with tenure), Department of Mathematics, University of Arizona, USA;
- July 1994 - May 1997: Assistant Professor, Department of Mathematics, University of Arizona, USA;
- September 1993 - June 1994: Member, Institute for Advanced Study, Princeton;
- September 1990 - June 1993: C. L. E. Moore Instructor, Massachusetts Institute of Technology;
- January 1985 - June 1990: Teaching/Research Assistant, Department of Mathematics, University of California Berkeley.

VISITING POSITIONS:

- August 1 - December 31, 2008: Centre Interfacultaire Bernoulli, École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland;
- August, 2004 and July 2006: University of California, Santa Barbara, USA;
- April 2004 - May 2004: Institut des Hautes Études Scientifiques, France;
- August 2003: Erwin Schoedinger Institute, Vienna, Austria;
- June 2003: Institut des Hautes Études Scientifiques, France;
- March - June 2001: Department of Mathematics, University of Hong Kong;
- July - August, 2000: Institut des Hautes Études Scientifiques, France;
- April 1997 - August 1998: Hong Kong University of Science and Technology;
- July, 1994: Isaac Newton Institute of Mathematics, Cambridge, England;

- May - June, 1994: Institut Henri Poincare, Paris, France.

AWARDS AND GRANTS:

- (1) Hong Kong RGC grant 704310 (HK\$754,055), 2010 - 2013;
- (2) Seed Funding for Basic Research at HKU (HK\$67,000), 2010 - 2012;
- (3) Hong Kong RGC grant 703707 (HK\$570,000), 2007 - 2010;
- (4) Hong Kong RGC grant 703405 (HK\$463,600), 2005 - 2008;
- (5) Seed Funding for Basic Research at HKU (HK\$70,000), 2005 - 2007;
- (6) Hong Kong RGC grant 703304 (HK\$392,000), 2004 - 2007;
- (7) Hong Kong RGC grant 701603 (HK\$486,000), 2003 - 2006;
- (8) Croucher Croucher Foundation Travel Grant (HK\$16550), 2003;
- (9) New Staff Seeding Fund at HKU (HK\$120,000), 2002 - 2004;
- (10) HHY Physical Sciences Fund at HKU (HK\$27,000), 2002 - 2003;
- (11) (USA)NSF grant DMS-0105195 (US\$48,800), 2001 - 2004;
- (12) (USA)NSF grant DMS-0217057 (US\$14,820), 2001, Co-PI for Workshop on Geometry and Topology of Quotients, December 5-8, 2002, Tucson, Arizona;
- (13) (USA)NSF grant DMS-0072551 (US\$75,657), 2000 - 2003;
- (14) (USA)NSF grant DMS-9803624 (US\$67,812), 1998 - 2001;
- (15) (USA)NSF grant DMS-9508920 (US\$66,000), Postdoctoral Research Fellowship, 1995 - 1998;
- (16) University of Arizona Foreign Travel Grant, 1995;
- (17) (USA)NSF grants DMS-9306389, Postdoctoral Associates (PI: R. Melrose), 1993;
- (18) (USA)NSF grants DMS-8907710, Postdoctoral Associate (PI: V. Guillemin), 1991;
- (19) Charles B. Morrey graduate student award, University of California at Berkeley, 1987.

COURSES TAUGHT:

- (1) Algebra I (The University of Hong Kong, Fall, 2006, 2007, 2009);
- (2) Algebra II (The University of Hong Kong, Spring, 2006);
- (3) Functional Analysis (The University of Hong Kong, 2003-present);
- (4) Introduction to Riemannian Symmetric Spaces (The University of Hong Kong, 2004);
- (5) Introduction to Differential Geometry (The University of Hong Kong, 2002, 2009);
- (6) Introduction to Symplectic Geometry (The University of Arizona, 2001);
- (7) Topic Course in Differential Geometry ((The University of Arizona, 2000);
- (8) Algebraic topology (University of Arizona, Spring and Fall, 1999);
- (9) Differential manifolds (University of Arizona, Fall, 1998);
- (10) Trigonometry (University of Arizona, Fall, 1995);
- (11) Real Analysis (undergraduate/graduate course, University of Arizona, Spring, 1994);
- (12) Complex Analysis (undergraduate/graduate course, University of Arizona, Spring, 1994);
- (13) Real Analysis (MIT, 1991 - 92);
- (14) Ordinary Differential Equations (MIT, 1991 - 92; HKU 2011, 2012);
- (15) Linear Algebra (MIT, 1990);
- (16) Partial Differential Equations (Teaching Assistant, University of California Berkeley, 1988);

- (17) Calculus (UC Berkeley, 1985-1988; MIT, 1990; University of Arizona, 1995 - 1999; The University of Hong Kong, 2003, 2004.);

STUDENTS:

- (1) SO, Bing Kwan, MPhil, 2003-2005;
- (2) CHOW, Alan Shek Hei, MPhil, 2003-2005;
- (3) NG, Ka Chun, MPhil, 2005-2008;
- (4) TO, Simon Kai Ming, PhD, 2006-2010;
- (5) LAU, Lai Ngor, MPhil, 2007 -2009;
- (6) CHAN, Kei Yuen, MPhil, 2008 -2010;
- (7) MOUQUIN, Victor, PhD, 2009 -;
- (8) BALAZS, Elek, Mphil, 2010-.

UNIVERSITY AND DEPARTMENTAL SERVICES:

- (1) Head, Department of Mathematics, HKU, September 1, 2011 -
- (2) Course Selection Advisor, Department of Mathematics, HKU, 2010 - 2011
- (3) Chief examiner, Department of Mathematics, HKU, 2007 - 2011;
- (4) Higher Degrees Committee for the Faculty of Science, The University of Hong Kong, 2003 - 2007;
- (5) Departmental Research Postgraduate Committee, Department of Mathematics, The University of Hong Kong, various years.
- (6) Faculty Review Committee for MPhil/PhD Candidates, Department of Mathematics, The University of Hong Kong, 2003 - 2006;
- (7) Oral Examination Panel, The University of Hong Kong, 2002 - 2010;
- (8) Promotion and Tenure Committee, University of Arizona, 1998-1999;
- (9) Mathematics Colloquium Chair, University of Arizona, 1995-1996;
- (10) Departmental Head Search Committee, University of Arizona, 1995-1996;
- (11) Degree exam committees, University of Arizona, University of Hong Kong, and the Hong Kong University of Science and Technology, 1994 - present.

PROFESSIONAL SERVICES:

- (1) Editor for the *Pacific Journal of Mathematics*, 2002 - present;
- (2) Editor for *Travaux Mathematique*, 2005 - present;
- (3) Scientific Committee on Poisson 2012, Utrecht, the Netherlands, 2012;
- (4) Co-organizer of *Workshop in Lie Theory and Geometry*, March 25 - 26, 2011, The University of Hong Kong;
- (5) Scientific Advisory Committee on Poisson 2008, Lausanne, Swizerland, 2008;
- (6) Scientific Advisory Committee on Poisson 2006, Tokyo, 2006;
- (7) Co-organizer of *Workshop in Geometry*, May 25 - 30, 2006, The Chinese University of Hong Kong;
- (8) Scientific Advisory Committee for the third International Congress for Chinese Mathematicians, Hong Kong, December 2004;
- (9) Co-organizer for the workshop on Geometry and Topology of Quotients, December 5-8, 2002, Tucson, Arizona;

- (10) Co-organizer for the conference on Poisson geometry and Lie theory, December 1999, Tucson, Arizona;
- (11) Co-organizer of the symplectic geometry conference, MIT, May 1993;
- (12) Scientific Advisory Committee for the Workshop on Quantum Groups and Quantum Spaces, Warsaw, Poland, November 1995;
- (13) (USA)NSF panel member;
- (14) Referee for (USA)NSF proposals;
- (15) Referee for various mathematical journals;

INVITED COLLOQUIUM TALKS:

- (1) Graduate Colloquium, Mathematics Institute, University of Gottingen, Germany, July 16, 2009;
- (2) Hong Kong Geometry Colloquium, October 2002;
- (3) Penn State University, April, 2000;
- (4) University of California at Santa Cruz, November 1999;
- (5) University of California at Berkeley, January 1997;
- (6) California Institute of Technology, May 1996;
- (7) Hong Kong University of Science and Technology, February 1996;
- (8) University of Maryland, April 1993;
- (9) University of Oregon, January 1993;

LECTURE SERIES/MINI-COURSES:

- (1) Summer school of Poisson 2010, Rio de Janeiro, July 20-23, 2010;
- (2) Troisième Cycle Romand de Mathématiques, Cours du semestre d'automne 2008 à l'EPFL, September 17 - December 17, 2008;
- (3) 11'th National Summer school of Mathematics, The Hong Kong University of Science and Technology, Hong Kong, July - August 2006;
- (4) Pathway Lecture Series in Mathematics, Keio University, Japan, November 24 - 26, 2005;
- (5) One week lectures for the summer program of Institute for Mathematics and Its applications, Minnesota, July 2001;
- (6) Lecture series on symplectic geometry, The University of Hong Kong, March - June, 2001;
- (7) Lecture series at the Workshop on Poisson geometry, Nankai Mathematics Institute, Tianjin, China, June 1995.

INVITED CONFERENCE TALKS:

- (1) International workshop on representation theory and harmonic analysis, Chern Institute of Mathematics, Nankai University, Tianjin, China, June 5-11, 2011.
- (2) The International Congress of Chinese Mathematicians, Beijing, Dec. 17-22, 2010;
- (3) Atlas on Lie groups workshop, University of Utah, July 19, 2010;
- (4) Symplectic and Poisson Geometry in interaction with Algebra, Analysis and Topology in honor of Alan Weinstein's retirement, MSRI, Berkeley, May 4-7, 2010.
- (5) Workshop on Transverse Poisson Structures and Poisson Singularities, EPFL, Switzerland, October 9-10, 2008;

- (6) Workshop on Moment maps, EPFL, Switzerland, August 4-8, 2008
- (7) Poisson 2008, July 4-11, 2008, EPFL, Lausanne, Switzerland;
- (8) The International Congress of Chinese Mathematicians, Zhejiang University, Hang Zhou, Dec. 17-22, 2007;
- (9) The Fourth Pacific Rim Conference on Mathematics, City University of Hong Kong, Dec. 7-11, 2007;
- (10) Geometric Aspects of Analysis and Mechanics: a conference in honor of the 65th birthday of Hans Duistermaat, August 20-24, 2007, Utrecht, the Netherlands.
- (11) Poisson 2006: Poisson geometry in mathematics and physics, June 5 - 9, 2006, Tokyo, Japan;
- (12) Summer School and Conference on Poisson Geometry, July 4 - July 23, 2005, ICTP, Trieste, Italy;
- (13) Symposium Lie Groups: from Topology to Arithmetic in memory of Armand Borel, Geneva and Zurich, Switzerland, June 29 - July 4, 2005;
- (14) The Third International Congress of Chinese Mathematicians, Hong Kong, December 17 - 22, 2004.
- (15) International Symposium on Representation Theory and Harmonic Analysis, Urumqi, Xinjiang, China, August 2-8, 2004;
- (16) Hong Kong Mathematical Society, April 17, 2004;
- (17) Workshop on moment maps, Erwin Schoedinger Institute, Vienna, Austria, August 2003;
- (18) International EuroSchool and EuroConference PQR 2003, Brussels, Belgium, June 19, 2003;
- (19) Rencontres Mathématiques de Glanon, Glanon, France, July 1, 2003;
- (20) Poisson 2002, Lisbon, Portugal, September 2002;
- (21) The Second International Congress of Chinese Mathematicians, Taiwan, December 2001;
- (22) International conference on orbits, crystals, and representation theory, IHP, Paris, May 22-25, 2000;
- (23) PSU Mini geometry conference, Penn State University, April 7-8, 2000;
- (24) Mimi symplectic geometry conference at MIT, October 1999;
- (25) Groupoidfest, Arizona State University, December, 1998;
- (26) AMS invited plenary address, Tucson, November, 1998;
- (27) Workshop on Poisson geometry, Banach Center, Warsaw, August 1998;
- (28) Symplectic geometry conference at MIT, April 1997, May 1995, October 1999;
- (29) Special session of AMS conference, Columbia, Missouri, November, 1996;
- (30) Colloquium on geometric quantization (organizers: M. Vergne, M. Duflo and L. Jeffrey), Luminy, France, July 1996;
- (31) Workshop on quantum groups and quantum spaces, Banach Center, Warsaw, Poland, November 1995;
- (32) Joint American Mathematical Society meetings, San Antonio, January 1993;
- (33) Association for Women in Mathematics Symposium on the Future of Women in Mathematics, San Francisco, January 1991.

SEMINAR TALKS:

- (1) IMS geometry seminar, Chinese University of Hong Kong, October 28, 2009;
- (2) Seminar on fundamental interactions, University of Feiburg, Gemany, December 12, 2008;
- (3) Séminaire "Algèbre Géométrie Algébrique Topologie Algébrique", Université Montpellier 2, Montpellier, France, December 11, 2008;
- (4) Séminaire Groupes de Lie et espaces des modules, University of Geneva, Geneva, Switzerland, September 30, 2008;
- (5) Department of Mathematics, Beijing University, July 4, 2007.
- (6) Department of Mathematics, University of Hawaii, December 28, 2005;
- (7) Geometry seminar, University of Californian at Santa Barbara, August 24, 2004;
- (8) Quantum group seminar, Ecole Normal Superieure, Paris, France, May 2, 2004;
- (9) Mathematical Physics Seminar, University of Lyon, France, May 7, 2004;
- (10) Symplectic geometry seminar, University of California, Berkeley, March 8, 2004;
- (11) Pure mathematics seminar, ZhongShan University, GuangZhou, China, 2003;
- (12) Lie theory seminar, The Hong Kong University of Science and Technology, February 13 and 15, 2001;
- (13) Geometry seminar, University of Lyon, France, September, 2000;
- (14) Physics inspired mathematics seminar, Univ. of North Carolina, April, 2000;
- (15) Special seminar, University of California, Berkeley, November 2000;
- (16) Special seminar, Ecole Polytechnique, France, June 1998;
- (17) Symplectic geometry seminar, UC Berkeley, April 1997, November 1999;
- (18) Symplectic geometry seminar, MIT, February 1997, 1990 - 1993;
- (19) Geometry seminar, University of Arizona, August 1994 - 1999;
- (20) Topology seminar, Cornell University, March 1996;
- (21) Geometry Seminar, Pennsylvania State University, March 1996;
- (22) Berkeley-Stanford-Davis-Santa Cruz symplectic geometry seminar, February 1995;
- (23) Integrable system seminar, University of Strassburg, France, June 1994;
- (24) Symplectic geometry seminar, Institut Henri Poincare, Paris, France, June 1994;
- (25) Geometry seminar, University of Maryland, April 1994;
- (26) Member seminar, Institute for Advanced Study, Princeton, March 1994;
- (27) Geometry seminar, Tokyo Metropolitan University, Tokyo, Japan, January 1994;
- (28) Department of Mathematics, Keio University, Tokyo, Japan, January 1994;
- (29) Algebra seminar, Rutgers University, November 1993;
- (30) Infinite dimensional Lie algebra seminar, MIT, 1992;
- (31) Lie group seminar, MIT, 1991;
- (32) Symplectic geometry seminar, University of California, Berkeley, 1987-1990.

PUBLICATION:

- (1) S. Evens and J.-H. Lu, On some invariants of orbits in the flag variety under a symmetric subgroup, arXiv:1104.2640.
- (2) J.-H. Lu, On a dimension formula for twisted spherical conjugacy classes in semisimple algebraic groups, **269** (3-4), 1181-1188 (2011)
- (3) X. He and J.-H. Lu, On intersections of certain partitions of a group compactification, *Intern. Math. Res. Notices*, **2011**(11), 2534 - 2564 (2011) (published online on September 15, 2010).

- (4) K. Y. Chan, J.-H. Lu, and K. M. To, On intersections of conjugacy classes and Bruhat cells, *Trans. Groups*, **15**(2), 243 - 260 (2010).
- (5) J.-H. Lu and M. Yakimov, Group orbits and regular partitions of Poisson manifolds, *Comm. Math. Phys.*, **283**(3), 729 - 748 (2008).
- (6) J.-H. Lu, A note on Poisson homogeneous spaces, *Poisson geometry in mathematics and physics*, Contemporary Mathematics, Vol 450, 2008.
- (7) Evens, S., Lu, J.-H., Poisson geometry of the Grothendieck resolution of a complex semisimple group, *Moscow Mathematical Journal* **7** (4) (special volume in honor of V. Ginzburg's 50'th birthday), 613 - 642 (2007).
- (8) J.-H. Lu and M. Yakimov, Partitions of the wonderful group compactification, *Transform. Groups* **12** (2007), no. 4, 695-723.
- (9) Evens, S., Lu, J.-H., On the variety of Lagrangian subalgebras, II, *Ann. Scient. Ecol. Norm. Sup.*, **39** (2), 347 - 379, 2006.
- (10) P. Foth and J.-H. Lu, Poisson structures on complex flag manifolds associated with real forms, *Trans. AMS*, **358** (4), 1705 - 1714, 2006, (electronically published on September 22, 2005).
- (11) J.-H. Lu and M. Yakimov, On a class of double cosets in reductive algebraic groups, *Inter. Math. Res. Notices*, **13**, 761-797, 2005;
- (12) S. Evens and J.-H. Lu, Thompson's conjecture for real semi-simple Lie groups, *Progress in Mathematics*, Vol. 232 (2005), Marsden, Jerrold E.; Ratiu, Tudor S. (Eds.), 121 - 147.
- (13) L. Ji and J.-H. Lu, New realizations of the maximal Satake compactification of Riemannian symmetric spaces, *Lett. Math. Phys.* **69** (1-3), 139 - 145, 2004;
- (14) P. Foth and J.-H. Lu, A Poisson structure on compact symmetric spaces, *Comm. Math. Phys.*, **251** (3), 557 - 566, 2004;
- (15) Evens, S., Lu, J.-H., On the variety of Lagrangian subalgebras, I, *Ann. Ecol. Norm. Sup.* (2001), 631 - 668;
- (16) Lu, J.-H., Yan M., Zhu, Y.-C., Hopf algebras with positive bases, *Journal of Algebra* **237** (2) (2001), 421-445;
- (17) Lu, J.-H., Classical dynamical r-matrices and homogeneous Poisson structures on G/H and K/T , *Comm. Math. Phys.* **212** (2000), 337 - 370;
- (18) Lu, J.-H., Yan M., Zhu, Y.-C., Quasi-triangular structures on Hopf algebras with positive bases, *New trends in Hopf algebra theory*, Proceedings of Colloquium on quantum groups and Hopf algebras, La Falda, Argentina, August 1999. Edited by N. Andruskiewitsch, et. al. (1999), 339 - 356.
- (19) Lu, J.-H., Yan M., Zhu, Y.-C., On the set-theoretical Yang-Baxter equation, *Duke Math. J.* **104** No. 1 (2000), 1-18;
- (20) Lu, J.-H., Coordinates on Schubert cells, Kostant's harmonic forms, and the Bruhat Poisson structure on G/B , *Transformation Groups*, **4** No.4 (1999), 355 - 374;
- (21) Evens, S., Lu, J.-H., Weinstein, A., Transverse measures, the modular class, and a cohomology pairing for Lie algebroids, *Quarterly Journal of Mathematics*, **50** (1999), 417 - 436;
- (22) Evens, S., Lu, J.-H., Poisson harmonic forms, Kostant harmonic forms, and the S^1 -equivariant cohomology of K/T , *Adv. Math.*, **142** (1999), 171 - 220;
- (23) Lu, J.-H., Poisson homogeneous spaces and Lie algebroids associated to Poisson actions, *Duke Math. J.*, **86** No. 2 (1997), 261 - 304;

- (24) Lu, J.-H., ‘Hopf algebroids and quantum groupoids, *Inter. J. Math.*, **7** No. 1 (1996), 47 - 70;
- (25) Lu, J.-H., On the Heisenberg double and the Drinfeld double of a Hopf algebra, *Duke Math. J.*, **74** No. 3 (1994), 763 - 776;
- (26) Lu, J.-H., Moment maps at the quantum level, *Comm. Math. Phys.* **157** (1993), 389 - 404;
- (27) Ginzburg, V., Lu, J.-H., Poisson cohomology of Morita-equivalent Poisson manifolds, *Duke Math. J.*, *IMRN*, No.10 (1992), 199 - 205;
- (28) Lu, J.-H., Ratiu, T., On the convexity theorem of Kostant, *J. AMS* **4** No. 2 (1991), 349 - 363;
- (29) Lu, J.-H., Weinstein, A., Appendix to “quantization of the Poisson $SU(2)$ and its Poisson homogeneous space-the 2-sphere” by A. Sheu, *Comm. Math. Phys.*, **135** (1991), 217 - 232;
- (30) Dazord, P., Lu, J.-H., Sondaz, D., Weinstein, A., Affinoides de Poisson, *Comptes Rendus de Seances, Academie de Sciences (Paris), Serie I. Mathematique*, **312** (1991), 523 - 527
- (31) Lu, J.-H., Momentum mappings and reductions of Poisson Lie group actions, *Proceedings of the Seminaire Sud-Rhodanien de Geometrie á Berkeley, 1989*, 1991 Springer-MSRI series, 209 - 226;
- (32) Lu, J.-H., Weinstein, A. Groupoides symplectiques doubles des groupes de Lie-Poisson, *Comptes Rendus de Seances, Academie de Sciences (Paris), Serie I. Mathematique*, **309** (1989), 951 - 954;
- (33) Lu, J.-H., Weinstein, A., Poisson Lie groups, dressing transformations, and Bruhat decompositions, *J. Diff. Geom.* **31** (1989), 501 - 526;
- (34) Lu, J.-H., A note on a theorem of Stanton-Weinstein on the L^4 -norms of spherical harmonics, *Math. Proc. of the Cambridge Philosophical Society* **102** (1987), 561 - 563.