

# Xiaomeng Xu

*Curriculum Vitae* (created October 2018)

+1 (857) 318-7521

xxu@mit.edu

math.mit.edu/~xxu

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Massachusetts Institute of Technology  
Office 2-178, Department of Mathematics  
77 Massachusetts Avenue  
Cambridge, MA 02139-4307

## Research Interests

Mathematical Physics, Poisson and Symplectic Geometry,  
Representation Theory.

## Employment

**Massachusetts Institute of Technology**, USA 09.2016–08.2019  
Postdoctoral Fellow, Mentor: Prof. Pavel Etingof.

**University of Geneva**, Switzerland, 06.2016–08.2016.  
Postdoctoral Fellow

## Education

**University of Geneva**, Switzerland, Ph.D. 02.2013–05.2016  
Advisor: Prof. Anton Alekseev.

**Peking University**, China, M.S. 09.2010–12.2012  
Advisor: Prof. Zhangju Liu.

**Henan University**, China, B.A. 09.2006–07.2010

## Publications Preprints

1. On deformations of Frobenius manifolds, *In preparation*..
2. Riemann-Hilbert maps and dynamical constructions, *In preparation*.
3. Stokes phenomenon and Yang-Baxter equations, *submitted*, arXiv:1808.07654.
4. Frobenius manifolds and quantum groups, *submitted*, arXiv:1801.00123.
5. (with V. Toledano Laredo) Stokes phenomenon and quantum groups. Part II in Thesis (2016).
6. Stokes phenomenon, Gelfand-Zeitlin systems and relative Ginzburg-Weinstein linearization, *Adv. Math.* 338 (2018), 237-265.
7. Irregular Riemann-Hilbert correspondence, Alekseev-Meinrenken dynamical r-matrices and Drinfeld twists, *Int. Math. Res. Not.* doi:10.1093/imrn/rnx103.
8. (with Y. Sheng and C. Zhu) String principal bundles and Courant algebroids, arXiv:1701.00959. Revision at *Int. Math. Res. Not.*
9. (with A. Alekseev, F. Naef and C. Zhu) Chern-Simons, Wess-Zumino and other cocycles from Kashiwara-Vergne and associators, *Lett Math Phys*, 108 (2018), no 3, 757-778.
10. (with H. Lang and Y. Sheng) Strong homotopy Lie algebras, homotopy Poisson manifolds and Courant algebroids, *Lett. Math. Phys.* 107 (2017), no 5, 861-885.

11. Generalized classical dynamical Yang-Baxter equations and moduli spaces of flat connections on surfaces, *Commun. Math. Phys.* 341 (2016), 523-542.
12. (with Z. Liu and Y. Sheng) The Pontryagin class for pre-Courant algebroids, *J. Geom. Phys.* 104 (2016), 148-162.
- 13 (with H. Lang and Y. Sheng) Nonabelian Omni-Lie algebras, *Banach Center Publications*, Polish Acad. Sci., Warsaw (2016).
14. (with N. Ikeda) Current Algebras from DG symplectic Pairs in Supergeometry, *submitted*.
15. (with N. Ikeda) Canonical functions, differential graded symplectic pairs in supergeometry, and Alexandrov-Kontsevich-Schwartz-Zaboronsky sigma models with boundaries, *J. Math. Phys.* 55 (2014).
16. Twisted Courant algebroids and coisotropic Cartan geometries, *J. Geom. Phys.* 82 (2014), 124131.

**Conference Talks** Poisson 2018– International Conference on Poisson Geometry, Fields Institute, Toronto, Canada, July 9-20, 2018.

String 2018, Goto show talk, Tohoku University, Japan, June 18–22, 2018.

Symmetries in symplectic, contact and Poisson geometry, Soochow University, June, 2018.

Young Geometric Analysts Forum 2018, TSIMF, Hainan, China, Jan 2018.

2017 Young Mathematician Forum, Peking University, Beijing, China, December 14-16, 2017.

Lie groups in mathematics and physics, Les Diablerets, Switzerland Aug 27-Sep 1, 2017.

”Gone fishing” Poisson geometry conference, University of Norte Dame, USA, May 4-7, 2017.

Irregular Connections, Character Varieties and Physics, Paris VII, France, Mar 6-9, 2017.

2016 Young Mathematician Forum, Peking University, Beijing, China, Dec 18-19, 2016.

Workshop on Geometry and Topology, University of Hong Kong, March, 2016.

Poisson Geometry and Mathematical Physics, Chern Institute, China, January 04-08, 2016.

Workshop on Cluster algebras, Jilin University, China, Aug 2014.

Winter School in Mathematical Physics, Les Diablerets, Switzerland, January 2014.

Higher Algebras and L-infinite Homotopy Theory, University of Luxembourg, June 2013.

### Seminar Talks

QMAP Seminar, University of California, Davis,	Nov 2018
Geometry, Symmetry, and Physics seminar, Yale,	Nov 2018
Representations and Lie Theory Seminar, Ohio State University,	Oct 2018
Mathematical physics seminar, Harvard University, Boston,	Sep 2018
Geometry Seminar, Hongkong University,	Jun 2018
Mirror symmetry seminar, Harvard University, Boston,	Apr 2018
University of Science and Technology of China,	Mar 2018
Nanjing University,	Mar 2018
Boston University, Boston,	Feb 2018
Columbia University, New York,	Oct 2017
Field Institute, University of Toronto, Canada,	Mar 2017
Geometric representation seminar, MIT, USA,	Mar 2017
Charles University, Prague, Czech Republic,	May 2016
Institut Henri Poincare, Paris, France,	Apr 2016
Universite de Montpellier, France,	Nov 2015
Topologies seminar, Universite de Montpellier, France,	Nov 2015
University of Geneva, Switzerland,	Oct 2015
Infinite algebra seminar, MIT, USA,	Apr 2015
University of Pennsylvania, USA,	May 2015
University of California Berkeley, USA,	Apr 2015
Yale University, USA,	Apr 2015
University of Pennsylvania State, USA,	May 2015
Swiss Federal Institute of Technology in Zurich, Switzerland,	Apr 2015
Institut Henri Poincare, Paris, France,	Feb 2015
University of Strasbourg, France,	Dec 2014
Georg-August-Universitat Gottingen, German,	Dec 2014
Several talks, University of Geneva, Switzerland,	2013-2015
Several talks, Peking University, China,	2011-2012

### Teaching

MASSACHUSETTS INSTITUTE OF TECHNOLOGY	
<b>Instructor</b>	
18.708 Topics in Algebra (a mini course)	Spring 2017
<b>Recitation Instructor</b>	
18.02 Multivariable Calculus,	Spring 2017
<b>Mentor</b>	
MIT Primes,	2017-2019
UNIVERSITY OF GENEVA	
<b>Teaching Assistant</b>	2013-2016
PEKING UNIVERSITY	
<b>Teaching assistant</b>	2011-2012

**Grants & Awards** Swiss National Science Foundation Return grant at ETH, 2019-20  
SNSF Advanced Postdoc. Mobility Fellowship, Mar 2018–Aug 2019  
SNSF Early Postdoc.Mobility Fellowship, Sep 2016–Feb 2018  
Award for Best Contribution for the conference **Integrable systems**,  
Congresso Stefano Franscini, Ascona, Switzerland, May 2016.

**Activities** Organization of the conference "Lie Theory and Mathematical Physics" at  
MIT July 2017  
Visitors at Fields Institute, July 2018  
University of Hongkong, Dec 2012, Dec 2013, Mar 2016  
Massachusetts Institute of Technology, May 2015  
University of California Berkeley, Apr 2015  
Georg-August-Universität Göttingen, July 2013, July 2014  
Referee for peer reviewed journals

**References** **Prof. Anton Alekseev** (advisor), Section de mathématiques 2-4 rue du  
Lievre, Bureau: 14, Case postale 64, CH-1211 Geneva 4, Switzerland. Tel:+41  
2237-91178. Fax: +41 2237-91176. Email: Anton.Alekseev@unige.ch.

**Prof. Pavel Etingof** (mentor), Department of Mathematics, Massachusetts  
Institute of Technology, 77 Massachusetts Ave. Cambridge, MA USA 02139.  
Tel: +1 (617) 253-3669. Fax: (617) 253-4358. Email: etingof@math.mit.edu.

**Prof. Marco Gualtieri**, Department of Mathematics, University of Toronto,  
40 St. George Street, Toronto, Ontario, M5S 2E4. Tel: +1 (416) 946-5439.  
Email: mgualt@math.toronto.edu.

**Prof. Larry Guth**, (teaching) Department of Mathematics, Massachusetts  
Institute of Technology, 77 Massachusetts Ave. Cambridge, MA USA 02139.  
Email: lguth@math.mit.edu.

**Prof. Eckhard Meinrenken**, Department of Mathematics, University of  
Toronto, 40 St. George Street, Toronto, Ontario, M5S 2E4. Tel: +1 (416)  
946-3569. Fax: (416) 978-4107. Email: mein@math.toronto.edu.

**Prof. Alan Weinstein**, Mathematics Department, U.C. Berkeley, Berke-  
ley, CA 94720, U.S.A. Tel: +1 (510) 642-3518. Fax: +1 (510) 642-8204.  
Email: hopfish@gmail.com.