# Martin Man-chun Li

Department of Mathematics                     Phone:        +852 3943-1851
The Chinese University of Hong Kong           Email:        martinli@math.cuhk.edu.hk
Rm 236, Lady Shaw Building                    Homepage:     http://www.math.cuhk.edu.hk/~martinli/
Shatin, N.T., Hong Kong                       Nationality:  Hong Kong, China

## Academic Appointments

| | | |
|---|---|---|
| 2014 - now | Assistant Professor | The Chinese University of Hong Kong |
| 2013 - 2014 | Postdoctoral Fellow | Massachusetts Institute of Technology |
| 2011 - 2013 | Postdoctoral Fellow | University of British Columbia |

## Academic Visits

2015    Spring    Massachusetts Institute of Technology

## Education

2006 - 2011    Ph.D. in Mathematics, Stanford University (*Thesis advisor: Prof. Richard Schoen*)
2002 - 2006    B.Sc. in Mathematics, Chinese University of Hong Kong (*First class honors*)

## Research Interests

Geometric Analysis and Geometric Partial Differential Equations; more specifically, minimal surfaces, min-max theory, free boundary problems, mathematical general relativity and geometric flows

## Publications

### Referred Journal Articles

1. M. Li, *Chord shortening flow and a theorem of Lusternik and Schnirelmann*, Accepted by Pacific Journal of Math.

2. Q. Guang, M. Li and X. Zhou, *Curvature estimates for stable free boundary minimal hypersurfaces*, Accepted by J. Reine Angew. Math. (Crelle)

3. M. Li, *A general existence theorem of embedded minimal surfaces with free boundary*, Comm. Pure Appl. Math. **68** (2015), no. 2, 286-331

4. A. Fraser and M. Li, *Compactness of the space of embedded minimal surfaces with free boundary in three-manifolds with nonnegative Ricci curvature and convex boundary*, J. Differential Geom. **96** (2014), no. 2, 183-200

5. M. Li, *A sharp comparison theorem for compact manifolds with mean convex boundary*, J. Geom. Anal. **24** (2014), no. 3, 1490-1496

6. M. Li, *On complete stable minimal surfaces in 4-manifolds with positive isotropic curvature*, Proc. Amer. Math. Soc. **140** (2012), no. 8, 2843-2854

### Preprints/In Progress

1. N. Kapouleas and M. Li, *Free boundary minimal surfaces in the unit three-ball via desingularization of the critical catenoid and the equatorial disk.* Preprint. arXiv:1709.08556

2. M. Li and X. Zhou, *A maximum principle for free boundary minimal varieties of arbitrary codimension.* Preprint. arXiv:1708.05001

3. M. Li and X. Zhou, *Min-max theory for free boundary minimal hypersurfaces I: regularity theory.* Preprint. arXiv:1611.02612

### Research reports and surveys

1. M. Li, *Free boundary minimal surfaces in the unit ball: recent advances and open questions.* to appear in Proceedings of the first annual meeting of ICCM

2. M. Li and X. Zhou, *On minimal surfaces with free boundary.* to appear in Special Issues of ICCM Notices

## Awards and Grants

2017   CUHK Research Summit Series 2017/18
2017   CUHK Direct Grant for Research 2017/18
2016   CUHK Research Fellowship Scheme
2015   RGC General Research Fund 2016/17, RGC-14323516
2015   CUHK Direct Grant for Research 2015/16
2015   CUHK Distinguished Scholar Scheme
2014   RGC Early Career Scheme 2015/16, RGC-24305115
2014   CUHK Direct Grant for Research 2014/15
2013   Croucher Foundation Fellowship
2013   Postdoctoral Travel Award at University of British Columbia
2006   Sir Edward Youde Memorial Fellowship for Overseas Studies
2005   Sir Edward Youde Memorial Scholarship
2004   Sir Edward Youde Memorial Scholarship
2003   Dr. Daisy Li Mathematics Prize
2002   University Award for Academic Excellence

## Invited Talks and Seminar

### Conference and Colloquium Talks

2018   Feb   *Geometric and Nonlinear Partial Differential Equations Conference*, Australia National University
2017   Dec   *The first Annual Meeting of International Consortium of Chinese Mathematicians*,
             Sun Yat-Sen University
2017   Oct   *Workshop on Geometry, Analysis and Probability*, BICMR, Peking University
2017   Sep   *The Fourth Taiwan International Conference on Geometry*, National Taiwan University
2017   May   *Geometry - in honour of Mario Micallef's 60th birthday*, University of Warwick
2017   Mar   *Mt. Aoba min-max mini-workshop*, Tohoku University
2016   Dec   *Geometry of Moduli Spaces of Low Dimensional Manifolds*, RIMS, Kyoto University
2016   Oct   *International Conference for the 70th Anniversary of Korean Mathematical Society*,
             Seoul National University, invited speaker (trip cancelled due to severe weather)
2016   Aug   *The 7th International Congress of Chinese Mathematicians*, Beijing, invited speaker
2015   Dec   *School & Workshop on Geometric Analysis*, Korea Institute for Advanced Study
2015   Jul   *Warwick-Imperial-Cambridge Geometric Analysis seminar 2015*, Imperial College London
2015   Jan   *Young Geometric Analysts' Forum*, Tsinghua Sanya International Mathematics Forum
2014   Sep   *Workshop on Differential Geometry*, The Chinese University of Hong Kong
2013   Oct   *Mini-workshop on Geometry*, Chinese University of Hong Kong
2013   Jun.  *Variational Problems and Geometric PDEs*, Universidad de Granada
2012   May   *Pacific Northwest Geometry Seminar*, University of British Columbia
2012   Apr   *Graduate Student and Post-doc Workshop on Mean Curvature Flow, Low-dimensional Topology
             and Related Topics*, Massachusetts Institute of Technology
2011   Apr   *AMS Spring Western Section Meeting*, Las Vegas, NV
2010   Mar   *Graduate Students and Post-doc Workshop on Mean Curvature Flows and Related Topics*,
             Johns Hopkins University

### Seminar Talks

2018   May   *Geometric Analysis Seminar*, Xiamen University
2018   May   *Differential Geometry and Geometric Analysis Seminar*, Nanjing University
2018   Apr   *Geometric Analysis Seminar*, Yau Mathematical Sciences Center, Tsinghua University
2018   Feb   *Geometric Analysis and Mathematical Physics Seminar*, University of Copenhagen
2017   Aug   *Geometric Analysis and Mathematical Physics Seminar*, University of Copenhagen
2016   May   *Joint Workshop*, University of Macau
2016   Mar   *Geometry-Topology Seminar*, University of Maryland College Park
2015   Oct   *Informal Geometric Analysis Seminar*, University of Maryland College Park
2015   Oct   *Analysis and Partial Differential Equations Seminar*, Johns Hopkins University

| 2014 | Apr | *Seminario de Ecuaciones en Derivadas Parciales*, Pontificia Universidad Católica de Chile |
|------|-----|------|
| 2013 | Sep | *Geometric Analysis Seminar*, Brown University |
| 2013 | May | *Seminario de Ecuaciones en Derivadas Parciales*, Pontificia Universidad Católica de Chile |
| 2013 | Apr | *Geometry Seminar*, Stanford University |
| 2013 | Mar | *Seminar on Pure Mathematics*, Hong Kong University of Science and Technology |
| 2013 | Feb | *Geometry and Analysis Seminar*, Columbia University |
| 2013 | Feb | *Geometric Analysis Seminar*, Massachusetts Institute of Technology |
| 2013 | Feb | *Differential Geometry Seminar*, City University of New York Graduate Center |
| 2013 | Feb | *Analysis and Partial Differential Equations Seminar*, Johns Hopkins University |
| 2013 | Feb | *General Relativity and Geometric Analysis Seminar*, Columbia University |
| 2013 | Feb | *Seminar*, Chinese University of Hong Kong |
| 2012 | Dec | *Seminario Capde*, Pontificia Universidad Católica de Chile |
| 2011 | Nov | *Differential Geometry, Mathematical Physics, PDE Seminar*, University of British Columbia |
| 2011 | Oct | *Differential Geometry Seminar*, University of California, Santa Barbara |
| 2011 | Feb | *Geometry and Physics Seminar*, University of Miami |
| 2011 | Jan | *General Relativity Seminar*, Columbia University |
| 2008 | Dec | *IMS/CUHK Seminar*, Chinese University of Hong Kong |

## Services

### Conference/workshops organized

- MIST 2018: Symposium on Geometric Analysis (Feb 3-5, 2018)
- Workshop on Geometric Analysis and General Relativity (Jan 12-16, 2018)
- Hong Kong Geometry Colloquium (Sep 10, 2016)
- Distinguished Lecture Series and Workshop on Geometric Analysis (Jun21-23, 2016)
- Mini-workshop on Differential Geometry (Dec 9, 2014)

### Referee for journal

- Commentarii Mathematici Helvetici
- Communications in Analysis and Geometry
- Geometry & Topology
- International Mathematics Research Notices
- Inventiones Mathematicae
- Journal of the American Mathematics Society
- Journal of Geometric Analysis
- Journal of the Korean Mathematical Society
- Manuscripta Mathematica
- Mathematische Annalen
- Mathematische Nachrichten
- New York Journal of Mathematics
- Transactions of the American Mathematical Society

### Reviewer

- MathSciNet: 2013 to present
- Swiss National Science Foundation: 2017

### Students/Postdocs mentored

- PhD: Gaoming Wang (2018-now), Shanjiang Chen (2016-now), Xiaoxiang Chai (2015-18)
- MPhil: Chi Fai Chau (2015-17)
- Postdocs: Yohsuke Imagi (2017-18)

## Teaching Experience

### Chinese University of Hong Kong

- MATH 1030: Linear Algebra I, Spring 2018
- MATH 2040: Linear Algebra II, Fall 2017
- MATH 4030: Differential Geometry, Fall 2017
- MATH 1030: Linear Algebra I, Spring 2017
- GENA 1113: Student-oriented Teaching and Seminar, Spring 2017
- MATH 2040: Linear Algebra II, Fall 2016
- MATH 4030: Differential Geometry, Fall 2016
- MATH 2040: Linear Algebra II, Spring 2016
- MATH 4030: Differential Geometry, Fall 2015
- MATH 1010: University Mathematics, Fall 2014
- MATH 2010: Advanced Calculus I, Fall 2014

### Massachusetts Institute of Technology

- MATH 18.02: Calculus, Winter 2013 (recitation leader)

### University of British Columbia

- MATH 317: Calculus IV, Summer 2013
- MATH 317: Calculus IV, Winter 2013
- MATH 153: Linear Systems, Winter 2012

### Stanford University (as teaching/course assistants)

- MATH 53H: Honors Multivariable Mathematics, Spring 2011
- MATH 52: Integral Calculus of Several Variables, Winter 2011
- MATH 51: Linear Algebra and Multivariable Calculus, Spring 2010
- MATH 131P: Partial Differential Equations, Winter 2010
- MATH 51: Linear Algebra and Multivariable Calculus, Winter 2009
- MATH 51: Linear Algebra and Multivariable Calculus, Winter 2008
- MATH 174A: Topics in Differential Equations and Analysis, Winter 2007