

Runhong Zong

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Research interests Algebraic Geometry, Arithmetic Geometry, Mathematical Physics, Application of Mathematics to Philosophy and Economics

Employment **Nanjing Univeristy** Nanjing, China
Professor, Department of Mathematics July 2019 – present

Johannes Gutenberg University Mainz Mainz, Germany
Postdoc, Department of Mathematics May 2017 – June 2019
Mentor: Professor Kang Zuo

University California, Los Angeles Los Angeles, USA
Assistant Adjunct Professor, Dept. of Mathematics August 2015 – May 2017

Institute for Advanced Study Princeton, USA
Member, School of Mathematics September 2014 – August 2015

Education **Univeristy of Pennsylvania** Pennsylvania, USA
M.A. in Economics September 2015 – August 2018

Princeton University Princeton, USA
Ph.D. in Mathematics September 2010 – November 2014
Mentor: Professor János Kollár

University of Science and Technology of China Hefei, China
B.S. in Mathematics and Applied Mathemtaics September 2006 – June 2010
Summa Cum Laude. Overall GPA: 4.19/4.30, Major GPA: 4.30/4.30

Publications **$U(1)$ -Gauge Theories on G_2 -Manifolds**
Zhi Hu, Runhong Zong
to appear in *Annales Henri Poincaré*

Weak Approximation for Fano Complete Intersections in Positive Characteristic
Jason Starr, Zhiyu Tian, Runhong Zong
Annales de l'Institut Fourier, Vol. 72, No. 4, pp. 1503-1534 (2022)

Hyperbolic Superspaces and Super-Riemann Surfaces

Zhi Hu, Runhong Zong

Communications in Mathematical Physics, Vol. 378, pp. 891-915 (2020)

Weak Approximation for Iso-trivial Families

Zhiyu Tian, Runhong Zong

Journal für die Reine und Angewandte Mathematik, Vol. 752, pp. 1-23 (2019)

A Geometric Characterisation of Toric Varieties

James McKernan, Roberto Svaldi, Morgan Brown, Runhong Zong

Duke Mathematical Journal, Vol. 167, Issue 5, pp. 923-968 (2018)

Curve Classes on Rationally Connected Varieties

Runhong Zong

“Rational Points, Rational Curves, and Entire Holomorphic Curves on Projective Varieties”–Contemporary Mathematics Series by American Mathematical Society, Vol. 654 (2015)

On Rational Connectedness of Globally F-Regular Threefolds

Yoshinori Gongyo, Zhiyuan Li, Hiromu Tanaka, Karl Schwede, Zsolt Patakfalvi, Runhong Zong

Advances in Mathematics, Vol. 280, pp. 47-78 (2015)

On the Space of Conics on Complete Intersections

Runhong Zong

Communications in Mathematics and Statistics, Vol. 2, pp. 33-45 (2014)

One Cycles on Rationally Connected Varieties

Zhiyu Tian, Runhong Zong

Compositio Mathematica, Vol. 150, Issue 03, pp. 396-408 (2012)

Preprints

The Prelude of New Economy: A Materialistic System Theory with Method of Ideological Analysis in Materialistic dialectics

Runhong Zong

Universal Constants, Law of Inertia and Emergent Geometry

Zhi Hu, Mulin Yan, Runhong Zong

arXiv:2303.02556 (2023)

Topological Structures of Moduli Spaces of Curves and Anabelian Geometry in Positive Characteristic

Zhi Hu, Yu Yang, Runhong Zong

arXiv:2301.04864 (2023)

Moduli Spaces of Parabolic Bundles over P^1 with Five Marked Points

Zhi Hu, Pengfei Huang, Runhong Zong

arXiv:2108.08994 (2021)

Generalized Deligne-Hitchin Twistor Spaces: Construction and Properties

Zhi Hu, Pengfei Huang, Runhong Zong

arXiv:2010.06893 (2020)

On Base Changes of Local Stability in Positive Characteristics

Zhi Hu, Runhong Zong

arXiv:2001.04083 (2020)

Research
Monographs/Books

Towards Socialist Political Economy with Chinese Characteristics

Runhong Zong

Currently planned to be published by *Synergy Publishing Pte. Ltd.*

Sharing and Competitive Economies: Absorption and Sublation

Runhong Zong

Currently planned to be published by *Peking University Press*

A Study of New Economics System: Integration and Unification of Sharing Economy and Competitive Economy

Runhong Zong

Currently planned to be published by *Xinhua Publishing House*

Operation of Material Systems and Ontology: A New Way of Study of Economics

Runhong Zong

Currently planned to be published by *Economic Daily Press*

Sharing and Competitive Economies: An Integrated Study Based on System Theory

Runhong Zong

Currently planned to be published by *China Publishing Group Modern Press*

Invited Talks

New Anabelian Phenomena for Curves in Positive Characteristics

Shenzhen Workshop in p -adic Arithmetic and Geometry, 1/13/2024

New Anabelian Phenomena for Curves in Positive Characteristics

45 Minutes Talk at ICCM 2023, 1/5/2024

New Anabelian Phenomena for Curves in Positive Characteristics

Tongji University Algebraic and Arithmetic Geometry Conference, 12/10/2023

On Base Change of Local Stability in Positive Characteristics

Algebraic Geometry and Arithmetic Geometry Conference, University of Science and Technology of China, 9/28/2019

Finding Rational Curves by Forgetful Maps

Chern Institute of Mathematics, Nankai University, 8/5/2018

Finding Rational Curves by Forgetful Maps

Department of Mathematics, Nanjing University, 7/15/2018

Finding Rational Curves by Forgetful Maps

School of Mathematical Science, Wuhan University, 6/5/2018

Finding Rational Curves by Forgetful Maps

School of Mathematical Science, Tongji University, 2/5/2018

Finding Rational Curves by Forgetful Maps

Postdoctoral Member Talk, Institute for Advanced Study, 10/01/2014

A New Look at the Graber-Harris-Starr Theorem

Conference–“Algebraic-Geometry-Seattle-2014”, University of Washington Seattle, 08/04/2014

On Density of Rational Points in the Adèles of Function Field of Curves

Number Theory Seminar, University of Berkeley, 10/30/2013

Weak Approximation for Isotrivial Families

Algebraic Geometry Seminar, University of Utah, 10/29/2013

Some New Results in the Topic of Rationally Connected Varieties

The Algebraic and Arithmetic Geometry Conference to “AGAG Summer School 2013”, University of Science and Technology of China, 8/27/2013

Weak Approximation for Isotrivial Families

Algebraic Geometry Seminar, Stanford University, 2/28/2013

One Cycles on Rationally Connected Varieties

Algebraic Geometry Seminar, California Institute of Technology, 11/19/2012

One Cycles on Rationally Connected Varieties

Algebraic Geometry Preprint Seminar, University of Utah, 10/26/2012