

Hyun Chul Jang

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RESEARCH INTEREST Geometric Analysis, Mathematical Relativity, Partial Differential Equations, Geometric Flows

EDUCATION *Ph. D. Mathematics* Expected 2020
Univeristy of Connecticut, CT, United States
Advisor : Lan-Hsuan Huang
Thesis title : Topics on asymptotically hyperbolic manifolds in general relativity (Tentative)

M. Sc. Mathematics Spring 2015
Sogang University, Seoul, Korea
Advisor : Pak Tung Ho
Thesis title : On the metric of a surface which maximizes the eigenvalue

B. Sc. Mathematics Spring 2013
Sogang University, Seoul, Korea

PUBLICATION Asymptotically hyperbolic 3-metrics with Ricci flow foliation,
Annales Henri Poincaré, **20** (2019), no. 3, pp. 797-811. [arXiv:1802.01019]
Mass rigidity for hyperbolic manifolds (with L. -H. Huang and D. Martin),
accepted by *Communications in Mathematical Physics* [arXiv:1904.12010]
Some scalar curvature warped product splitting theorems (with G. J. Galloway),
accepted by *Proceedings of the American Mathematical Society* [arXiv:1907.09396].

AWARDS Doctoral Dissertation Fellowship Spring 2020
Predoctoral Dissertation Fellowship Spring 2019
Provost Excellence in Teaching Fall 2018, Fall 2019
Doctoral Student Travel Award Spring 2018
Graduate Fellowship Summer 2016
Brain Korea 21 Program for Leading Universities & Students 2013-2014
Scholarship of Academic Achievement 2011-2012
Dean's List of the School of Natural Sciences 2011-2012

INVITED TALKS Mass rigidity of asymptotically hyperbolic spaces and some splitting theormes
CMSA General Relativity Seminar (Online talk)
Harvard CMSA, *Cambridge, MA* Apr 2020
Some scalar curvature warped prodcut splitting theorems
Workshop on Geometric Analysis
University of Miami, *Miami, FL* Nov 2019
Mass rigidity for hyperbolic manifolds
Mathematical Relativity: A Riemannian Approach
CIMAT, *Guanajuato, Mexico* May 2019

Asymptotically hyperbolic 3-metrics with Ricci flow foliation
 2019 AMS Spring Eastern Sectional Meeting
 University of Connecticut, *Hartford, CT* Apr 2019

Interesting questions solved by geometric flows
 UConn S.I.G.M.A seminar
 University of Connecticut, *Storrs, CT* Mar 2019

Asymptotically hyperbolic manifolds in General relativity
 Analysis learning seminar
 University of Connecticut, *Storrs, CT* Feb 2019

Rigidity conjecture for asymptotically hyperbolic spaces with zero mass
 New York General Relativity Seminar
 The Graduate Center, *CUNY, NY* Nov 2018

Gaussian bounds on the heat kernel in Ricci flow with bounded scalar curvature
 Geometric Flows seminar
 University of Connecticut, *Storrs, CT* Nov 2018

Distance distortion estimate in Ricci flows with bounded scalar curvature
 Geometric Flows seminar
 University of Connecticut, *Storrs, CT* Nov 2018

Asymptotically hyperbolic 3-metrics with Ricci flow foliation
 Asymptotically Hyperbolic manifolds (18w5108)
 Banff International Research Station, *Banff, Alberta, Canada* May 2018

Entropy Formulas and Perelman's reduced distance
 Geometric Flows seminar
 University of Connecticut, *Storrs, CT* Apr 2018

Asymptotically hyperbolic 3-metrics with Ricci flow foliation
 UConn S.I.G.M.A seminar
 University of Connecticut, *Storrs, CT* Feb 2018

**CONFERENCES
 AND
 WORKSHOPS
 ATTENDED**

Workshop on Geometric Analysis
 University of Miami, *Miami, FL* Nov 2019

Mathematical Relativity: A Riemannian Approach
 CIMAT, *Guanajuato, Mexico* May 2019

A Celebration of Mathematical Relativity in Miami
 University of Miami, *Miami, FL* Dec 2018

Summer School in Minimal Surfaces, Flows, and Relativity
 University of Connecticut, *Storrs, CT* Aug 2018

Asymptotically Hyperbolic manifolds (18w5108)
 Banff International Research Station, *Banff, Alberta, Canada* May 2018

Spring School on Geometric Aspects of General Relativity
 Simons Center for Geometry and Physics, *Stony Brook, NY* Mar 2018

Geometry and Relativity
 Erwin Schrödinger Institute, *Vienna, Austria* Jul 2017

Mini-school on Nonlinear Equations
 Harvard CMSA, *Cambridge, MA* Dec 2016

Aspects of General Relativity
 Harvard CMSA, *Cambridge, MA* May 2016

**TEACHING
EXPERIENCE**

University of Connecticut

MATH2110 Multivariable Calculus discussion	Spring 2020
MATH1131 Calculus I Honors	Fall 2019
MATH2410 Elementary Differential Equations (Primary instructor)	Spring 2019
MATH2110 Multivariable Calculus Discussion	Fall 2018
MATH1132 Calculus II Discussion	Spring 2018
MATH2110 Multivariable Calculus Discussion	Fall 2017
MATH2110 Multivariable Calculus Discussion	Spring 2017
MATH2110 Multivariable Calculus Discussion	Fall 2016
MATH1132 Calculus II Discussion	Spring 2015