Supanat Kamtue

Personal Data

Email	skamtue@mail.tsinghua.edu.cn; skamtue@gmail.com
Web Page	https://skamtue.github.io/

Current Affiliation

Programme	Postdoctoral researcher at Yau Mathematical Sciences Center, Tsinghua University Beijing, China
Research Area	Riemannian Geometry, Optimal Transport Theory, Graph Theory, Synthetic Curvature
Research Topic	Ricci curvature notions in discrete spaces
Supervisor	Professor Yong Lin

Education

October 2021	**PhD in Mathematical Sciences**, Durham University, United Kingdom Thesis: Discrete curvatures motivated from Riemannian geometry and optimal transport: Bonnet-Myers-type diameter bounds and rigidity — under the supervision of Prof. Norbert Peyerimhoff
October 2017	**MSc in Mathematical Sciences**, Durham University, United Kingdom
June 2015	**BSc in Mathematics**, Massachusetts Institute of Technology, Cambridge, MA, USA

Teaching Experience

Summer 2023	Associate Academic Director at The 1st International Mathematics Summer Camp Beijing, China
Fall 2022	Teaching Assistant for Linear Algebra, Tsinghua University
2017–18 2018–19	Teaching Assistant for Analysis I, Durham University
Fall 2013	Teaching Assistant for Differential Equations, Massachusetts Institute of Technology
Specialty Areas	Differential Geometry, Riemannian Geometry, Spectra and Geometry of Graphs

Scholarships and Awards

2010–2021	Royal Thai Government Scholarship Institute for the Promotion of Teaching Science and Technology
2019	Willmore Pure Postgraduate Award Department of Mathematical Sciences, Durham University
2011 and 2013	Putnam Mathematical Competition Honorable Mention
2008, 2009, 2010	International Mathematical Olympiad (IMO) Silver medal at the 49^{th}, 50^{th}, and 51^{st} IMO

Invited Talks

August 2023	Ricci curvature on discrete spaces Math CU seminar, Chulalongkorn University, Thailand
January 2023	Discrete Ricci curvatures via Optimal Transport Theory Bangkok Workshop on Discrete Geometry, Dynamics and Statistics, Chulalongkorn University, Thailand
September 2022	Introduction to discrete curvature notions YMSC Topology Seminar, Tsinghua University, Beijing, China
August 2022	Bakry-Émery curvature on graphs as an eigenvalue problem. The 9th International Congress of Chinese Mathematicians, Nanjing, China
November 2021	Entropic Ricci curvature on discrete Markov chains. Spectral Geometry seminar at USTC, Hefei, China
December 2020	Ricci curvature of discrete Markov chains as geodesic convexity of the entropy Yorkshire Durham Geometry Day, Durham University, United Kingdom
January 2020	Graph Curvature Calculator Bangkok Workshop on Discrete Geometry, Dynamics and Statistics, Chulalongkorn University, Thailand
July 2019	Diameter bound under curvature-dimension condition on graphs Yau Mathematical Sciences Center, Tsinghua University, Beijing, China
May 2019	Introduction series: Entropic curvature on graphs University of Science and Technology of China, Hefei, China
June 2018	Rigidity for the discrete Bonnet-Myers diameter bound. Which graphs look like a sphere? Geometry and Topology seminar, Durham University, United Kingdom
April 2018	Piecewise linearity of the idleness function of the Ollivier's curvature Workshop: Graphs on Fire, University of Science and Technology of China, Hefei, China
January 2018	Long-scale Ollivier's Ricci curvature of graphs Analysis seminar, Newcastle University, United Kingdom

Publications and Preprints

D. Cushing, S. Kamtue, S. Liu and N. Peyerimhoff
Bakry-Émery curvature on graphs as an eigenvalue problem
Calc. Var. Partial Differential Equations **61**(2) (2022).

D. Cushing, S. Kamtue, R. Kangaslampi, S. Liu and N. Peyerimhoff
Curvatures, graph products and Ricci flatness, J. Graph Theory **96**(4) (2021), 522–553.

D. Cushing, S. Kamtue, J. Koolen, S. Liu, F. Münch and N. Peyerimhoff
Rigidity for the Bonnet-Myers for graphs with respect to Ollivier Ricci curvature
Adv. Math. **369** (2020), 107188.

D. Cushing, S. Kamtue, N. Peyerimhoff and L. Watson May
Quartic graphs which are Bakry-Émery curvature sharp
Discrete Math. **343**(3) (2020), 111767.

D. Cushing and S. Kamtue, *Long-scale Ollivier Ricci curvature of graphs*
Anal. Geom. Metr. Spaces **7**(1) (2019), 22–44.

S. Kamtue, P. Luangaram and S. Woramongkhon
Disentangling global equity market instability: a network analysis (2022)
`arXiv:2111.14227`.

P. Jiradilok and S. Kamtue, *Transportation distance between probability measures on the infinite regular tree* (2021) `arXiv:2107.09876`.

S. Kamtue, *Bonnet-Myers sharp graphs of diameter three* (2020) `arXiv:2005.06704`.

S. Kamtue, *A note on a Bonnet-Myers type diameter bound for graphs with positive entropic Ricci curvature* (2020) `arXiv:2003.01160`.

S. Kamtue, *Combinatorial, Bakry-Émery, Ollivier's Ricci curvature notions and their motivation from Riemannian geometry* (2018) `arXiv:1803.08898`.

S. Kamtue, *Domino-Tiling Problem*
https://math.mit.edu/research/undergraduate/spur/documents/2013Kamtue.pdf