

SUPANAT KAMTUE

PERSONAL DATA

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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

SCHOLARSHIPS AND AWARDS

2010–2021 Royal Thai Government Scholarship
Institute for the Promotion of Teaching Science and Technology

2019/2020 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 49th, 50th, and 51st IMO

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

INVITED TALKS

- 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, Chula 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, *Bonnet-Myers sharp graphs of diameter three* (2020) [arXiv:2005.06704](https://arxiv.org/abs/2005.06704).
- S. Kamtue, *A note on a Bonnet-Myers type diameter bound - for graphs with positive entropic Ricci curvature* (2020) [arXiv:2003.01160](https://arxiv.org/abs/2003.01160).
- S. Kamtue, *Combinatorial, Bakry-Émery, Ollivier's Ricci curvature notions - and their motivation from Riemannian geometry* (2018) [arXiv:1803.08898](https://arxiv.org/abs/1803.08898).
- S. Kamtue, *Domino-Tiling Problem*
<https://math.mit.edu/research/undergraduate/spur/documents/2013Kamtue.pdf>