

# Shengxuan Zhou

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## Research Interests

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Partial Differential Equations, Kähler Geometry, Metric Geometry

## Employment

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**Institute of Mathematics of Toulouse**

September 2024 – Present

*Postdoc, funded by Labex CIMI*

*Toulouse, France*

Mentor: Professor Henri Guenancia

## Education

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**Peking University**

September 2019 – July 2024

*Ph.D. in Mathematics, Department of Mathematics*

*Beijing, China*

Advisor: Professor Gang Tian

**Lanzhou University**

September 2015 – July 2019

*B.S. in Mathematics, School of Mathematics and Statistics*

*Lanzhou, China*

## Publications and Preprints

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**A family of 4-Manifolds with Nonnegative Ricci Curvature and Prescribed Asymptotic Cone**

*arXiv:2406.02279 (Submitted).*

**New exotic examples of Ricci limit spaces**

*Joint work with Xilun Li and Yanan Ye.*

*arXiv:2404.15054 (Submitted).*

**On the  $L^2$  volume of Bergman spaces**

*arXiv:2404.12840 (Submitted).*

**Examples of Ricci limit spaces with infinite holes**

*arXiv:2404.00619 (Submitted).*

**On the Gromov-Hausdorff limits of Tori with Ricci conditions**

*arXiv:2309.10997 (Submitted).*

**Bergman kernels on degenerations**

*Joint work with Linsheng Wang*

*arXiv:2304.01943. Accepted by Math. Z.*

**Peak sections and Bergman kernels on Kähler manifolds with complex hyperbolic cusps**

*Math. Ann.* (2024). <https://doi.org/10.1007/s00208-024-02798-9>

**A Regularity Theory for Static Schrödinger Equations on  $\mathbb{R}^d$  in Spectral Barron Spaces**

*Joint work with Zi'ang Chen, Jianfeng Lu and Yulong Lu.*

*SIAM J. Math. Anal.* **55** (2023), no. 1, 557–570.

**The asymptotic behaviour of Bergman kernels**

*Adv. Math.* **440** (2024). <https://doi.org/10.1016/j.aim.2024.109514>

**On the convergence rate of Bergman metrics**

*Peking Math J* (2022). <https://doi.org/10.1007/s42543-022-00055-z>

## *Talks*

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<b>Geometric Analysis Seminar (Online)</b> <i>Zhejiang University</i>	December 2021
<b>Rutgers CA/HA/CG Seminar (Online)</b> <i>Rutgers University</i>	April 2022
<b>Beijing Geometry Day</b> <i>Beijing Normal University</i>	March 2023
<b>Recent Progress in Geometric Analysis</b> <i>Westlake University</i>	April 2023
<b>Geometry Seminar</b> <i>Tsinghua University</i>	September 2023
<b>Geometry Seminar</b> <i>Westlake University</i>	October 2023
<b>Differential Geometry Seminar (Online)</b> <i>UC Berkeley</i>	February 2024
<b>Differential Geometry Seminar</b> <i>Capital Normal University</i>	March 2024
<b>Workshop on Geometric Analysis</b> <i>Inner Mongolia University</i>	July 2024

## *Teaching*

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<b>Teaching Assistant: Differential Geometry</b> <i>Peking University</i>	Spring 2020
<b>Teaching Assistant: Differential Geometry</b> <i>Peking University</i>	Spring 2021
<b>Teaching Assistant: Mathematical Analysis III</b> <i>Peking University</i>	Fall 2021
<b>Teaching Assistant: Advanced Algebra II</b> <i>Peking University</i>	Spring 2022
<b>Teaching Assistant: Advanced Mathematics B</b> <i>Peking University</i>	Fall 2022