Quan Situ

Curriculum Vitae
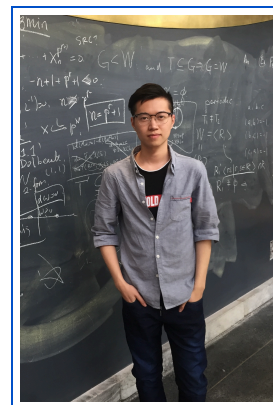
Personal Information

Nationality	China
Adress	Université Clermont Auvergne, Clermont-Ferrand, 63000, France
E-mail	quansitu97@gmail.com
Phone number	+33 0766174714
Birthday	Aug. 30, 1997

Position

Sep. 2024-now	**Post-doctoral researcher**, *Université Clermont Auvergne*.

Education

Aug.2019-Jul.2024	**Doctor of Philosophy**, *Tsinghua University*, Supervisor: Peng Shan.
Aug.2015-Jun.2019	**Bachelor of Science**, *Nankai University*.

Research visits

Feb.-Jul. 2023	Université de Paris Cité, Inviter: Eric Vasserot
Mar.13-17 2023	Université Clerment-Auvergne, Inviter: Simon Riche

Awards & Scholarships

2017	Nankai University Boling Scholarship
2020	Tsinghua University Future Scholar Scholarship
2020 & 2023	Yau Mathematical Science Center Scholarship
2023	Graduate Thesis Award of the International Congress of Chinese Mathematicians (ICCM) 2023

Research Interests

My interest mainly lies in Geometric Representation Theory, which involves studying representation theory through the tools from algebraic geometry and from categorification.
I am specifically interested in modular representation theory of objects from Lie theory (e.g. Lie algebras, algebraic groups, Coxeter groups and their quantizations).

Publication

On the category $\mathcal{O}$ of a hybrid quantum group. Represent. Theory 28 (2024), 434-480.

Preprints

arXiv:2211.03139	*Center of the category $\mathcal{O}$ for a hybrid quantum group*
arXiv:2308.07028	*Category $\mathcal{O}$ for hybrid quantum groups and non-commutative Springer resolutions*

Teaching experience

As Teaching assistant

Spring 2019	Representation theory of finite groups
Fall 2019&Fall 2020	Abstract algebra
Spring2020&Spring2021	Honors algebra

Research Presentations

Invited Conference Talks

Jan. 2023	**NCTS East Asia Core Doctoral Forum in Mathematics**, *National Center for Theoretical Sciences Mathematics Division*.
Jul. 2023	**Geometric Representation Theory and Applications**, *Tsinghua University*, Student presentations.
Nov. 2023	**The 16th National Algebra Academic Conference**, *Huaqiao University*.
Jan. 2024	**International Congress of Chinese Mathematicians (ICCM)**, *Fudan University, Shanghai Institute for Mathematics and Interdisciplinary Sciences*.

Research Seminar Talks

Dec. 2022	**Geometric Representation Seminar**, *Tsinghua University*, organized by Will Donovan, Penghui Li, Peng Shan and Changjian Su.
Jun. 2023	**Séminaires: Groups, Représentations et Géométrie**, *Université de Paris Cité*, organized by Eric Vasserot et al.

Learning Seminar Presentations

Spring 2020	**Geometric Satake Equivalence**, *Student Seminar*, Reference: An introduction to affine Grassmannian and geometric Satake equivalence by Xinwen Zhu.
Fall 2020-Fall 2021	**Perverse Sheaves, $\mathcal{D}$-modules and Their Applications to Representation Theories**, *Student Seminar*, Main Topics: Perverse sheaves and $\mathcal{D}$-modules, Riemann-Hilbert correspondence, Borel-Bott-Weil theorem, localization theorem in characteristic 0 and p, Frobenius splitting, derived Satake equivalence.
Fall 2023	**Integral homology of loop groups via Langlands dual group**, Main reference: Integral homology of loop groups via Langlands dual group by Zhiwei Yun and Xinwen Zhu.

Conferences Attended

Jul. 2021	**The 17th National Lie Theory Conference**, *Harbin Normal University*.
Jun. 2023	**Representation Theory in Lyon**, *Université Lyon 1 in Villeurbanne*.
Jul. 2023	**International Congress of Basic Science**, *Beijing Institute of Mathematical Sciences and Applications*.

Seminars and Mini-Courses Attended

Mini-Courses

Jul. 2020	**Quiver Hecke Algebra**, *Peng Shan*, Main reference: Quiver Hecke algebras and categorification by J. Brundan.

Nov.-Dec. 2022	**Introduction to Deligne-Lusztig's Theory**, *Cédric Bonnafé*, Main references: Representations of $SL_2(\mathbb{F}_q)$ by C. Bonnafé; Representations of Finite Groups of Lie type by F. Digne and J. Michel.
May 2023	**Cohomological Hall algebras in dimensions one and two and applications**, *Olivier Schiffmann*, Main topics: Cohomological Hall algebras of quivers and curves, Kac's conjecture.
Jun. 2023	**Applications of Satake correspondence**, *Simon Riche*, Main topics: Geometric Satake equivalence, Smith–Treumann theory and the linkage principle.

Learning seminars

Fall 2022	**Quiver Varieties and Coulomb Branches**, *organized by Dylan G. Allegretti and Peng Shan*, Main reference: K-theoretic Coulomb Branches of quiver Gauge theories and cluster varieties by G. Schrader and A. Shapiro.