Venice International University
VIU Summer School
Perverse Sheaves and their Categorification in Geometry and Representation Theory
July 13-17, 2026

Scientific Coordinators
Giovanna Carnovale, University of Padova
William Donovan, Tsinghua University
Francesco Esposito, University of Padova
Martina Lanini, Tor Vergata University of Rome
Francesco Sala, University of Pisa

Faculty
Agnieszka Bodzenta-Skibinska, University of Warsaw
Merlin Christ, University of Bonn
Jens Eberhardt, University of Mainz
Francesco Esposito, University of Padova
Daniel Juteau, University of Picardie Jules Verne
Paul Wedrich, University of Hamburg *(tbc)*

Coordinators of the poster session
Martina Lanini, University of Rome Tor Vergata
William Donovan, Tsinghua University

Program

Monday, July 13, 2026

8:50 – 9:00 **Registration**

9:00 – 9:15 **Welcome and Introduction of VIU and the Summer School**
Structure of the course, practicalities and presentation of Faculty

9:15 – 10:40 **Derived categories and perverse sheaves**
Daniel Juteau, University of Picardie Jules Verne

10:40 – 11:10 Coffee break

11:10 – 12:50 **Introduction to Soergel bimodules**
Jens Eberhardt, University of Mainz

13:00 – 14:30 Lunch

14:30 – 15:20 **Introduction to Spherical Functors**
Agnieszka Bodzenta-Skibinska, University of Warsaw

15:20 – 15:50 Break

15:50 – 16:40 **Exercise session on derived categories and perverse sheaves**
Francesco Esposito, University of Padova

Tuesday, July 14, 2026

9:00 – 10:40 **Derived categories and perverse sheaves**
Daniel Juteau, University of Picardie Jules Verne

10:40 – 11:10 Coffee break

11:10 – 12:50 **Introduction to Spherical Functors**
Agnieszka Bodzenta-Skibinska, University of Warsaw

13:00 – 14:30 Lunch

14:30 – 15:20 **Introduction to Soergel bimodules**
Jens Eberhardt, University of Mainz

15:20 – 15:50 Break

15:50 – 16:40 **Exercise session on derived categories and perverse sheaves**
Francesco Esposito, University of Padova

Wednesday, July 15, 2026

9:00 – 10:40 **Derived categories and perverse sheaves**
Daniel Juteau, University of Picardie Jules Verne

10:40 – 11:10 Coffee break

11:10 – 12:00 **Introduction to Soergel bimodules**
Jens Eberhardt, University of Mainz

12:00 – 12:50 **Introduction to Spherical Functors**
Agnieszka Bodzenta-Skibinska, University of Warsaw

13:00 – 14:30 Lunch

14:30 – 15:20 **Categorical braid group actions and perverse schobers of Coxeter type A**
Paul Wedrich, University of Hamburg

15:20 – 15:50 Break

15:50 – 16:40 **Introduction to perverse schobers**
Merlin Christ, University of Bonn

Thursday, July 16, 2026

9:00 – 9:50 **Introduction to Soergel bimodules**
Jens Eberhardt, University of Mainz

9:50 – 10:40 **Categorical braid group actions and perverse schobers of Coxeter type A**
Paul Wedrich, University of Hamburg

10:40 – 11:10 *Coffee break*

11:10 – 12:00 **Categorical braid group actions and perverse schobers of Coxeter type A**
Paul Wedrich, University of Hamburg

12:00 – 12:50 **Poster session**
Martina Lanini, University of Rome Tor Vergata & William Donovan, Tsinghua University

13:00 – 14:30 *Lunch*

15:50 – 16:40 **Introduction to perverse schobers**
Merlin Christ, University of Bonn

15:20 – 15:50 *Break*

15:50 – 16:40 **Introduction to perverse schobers**
Merlin Christ, University of Bonn

Friday, July 17, 2026

9:00 – 9:50 **Introduction to Spherical Functors**
Agnieszka Bodzenta-Skibinska, University of Warsaw

9:50 – 10:40 **Introduction to perverse schobers**
Merlin Christ, University of Bonn

10:40 – 11:10 *Coffee break*

11:10 – 12:00 **Introduction to perverse schobers**
Merlin Christ, University of Bonn

12:00 – 12:50 **Question & Answer**
Giovanna Carnovale, University of Padova; William Donovan, Tsinghua University; Francesco Esposito, University of Padova; Martina Lanini, Tor Vergata University of Rome; Francesco Sala, University of Pisa

13:00 – 14:30 *Lunch*

15:50 – 16:40 **Categorical braid group actions and perverse schobers of Coxeter type A**
Paul Wedrich, University of Hamburg

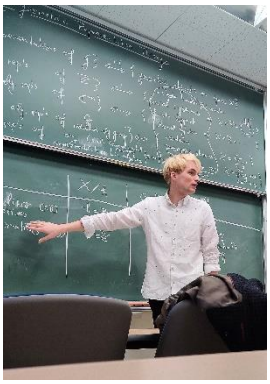
15:20 – 15:50 *Break*

15:50 – 16:40 **Categorical braid group actions and perverse schobers of Coxeter type A**
Paul Wedrich, University of Hamburg

Short bios

Giovanna Carnovale is Professor of Algebra at the University of Padova in the Department of Mathematics Tullio Levi-Civita. She participated in the Master Class on Algebraic Lie Theory and Hypergeometric Functions in the Netherlands, where she also received her PhD in 1999, studying a quantum analogue of Fourier transform. After spending a few months at Cergy-Pontoise and Paris VI, she moved to Antwerp where she learnt about the Brauer group of Hopf algebras and of braided categories. She moved back to Rome, Tor Vergata, shortly after and in 2001, to the University of Padova. At present she mainly works on algebraic and geometric properties of conjugacy classes in reductive algebraic groups (key example GL(V)) with some digressions in finite groups of Lie type, and an eye to applications in Hopf algebra theory and Representation Theory.

William Donovan is Associate Professor in the Yau Mathematical Sciences Center, Jingzhai, Tsinghua University. His focus is geometry, in particular applying ideas from physics and noncommutative algebra to study varieties, using tools of homological algebra and category theory. He studied at Cambridge University, completed his PhD at Imperial College London, and was postdoctoral researcher at Edinburgh University, UK. His work is published in journals including Communications in Mathematical Physics and Duke Mathematical Journal. He is supported by China Thousand Talents Plan, and received a Japan Society for Promotion of Science Young Scientist grant award.



Jens Eberhardt is junior Professor at the University of Mainz. He is also Principal Investigator of the European Doctoral Network REMOLD on geometric representation theory and the Langlands program. Previously, he held a research position funded by his research grant "Equivariant K-motives and Koszul Duality" from the German Research Foundation (DFG). He completed his PhD at the University of Freiburg.

Francesco Esposito is Associate Professor in Geometry at the Mathematics Department of the University of Padova. His research topics include Algebraic Groups, Arithmetic Geometry, and Lie Theory. He obtained his PhD in Mathematics at the Università degli Studi di Roma “La Sapienza”, thesis title “Orbits in Symmetric Varieties” in 2005. He has been an invited speaker at numerous conferences, most recently at the Joint Meeting AMS-UMI Palermo 2024, special session Representation Theory: Lie Theory and Geometry, seminar title “Flipclasses and combinatorial invariance of Kazhdan-Lusztig polynomials”.

Martina Lanini is Full Professor in the Department of Mathematics at the Università degli Studi di Roma Tor Vergata. Her research addresses the interplay between representation theory (of Kac-Moody algebras, algebraic groups, quantum groups, Cherednik algebras, quivers), algebraic combinatorics (Kazhdan-Lusztig polynomials, moment graphs, Schubert calculus) and geometry (perverse sheaves, parity sheaves, degenerate flag varieties, toric varieties, generalised cohomology theories, quiver Grassmannians). She and Fabio Gavarini, organise ARTS (Algebra & Representation Theory Seminar) in Roma Tor Vergata.

Francesco Sala is Associate Professor at the Department of Mathematics of the University of Pisa and a Visiting Scientist at Kavli IPMU (Kavli Institute for the Physics and Mathematics of the Universe), the University of Tokyo, Japan. He received his PhD in 2011 from SISSA, Trieste, and the Université Lille (formerly, Université de Lille 1). His research interests originate from the interplay between representation theory, algebraic geometry, and mathematical physics. In recent years, he has been focusing on the study of Hall algebras and their refined versions (cohomological, K-theoretical, categorified), and their relation to the theory of quantum groups.

Agnieszka Bodzenta-Skibińska is Assistant Professor at the University of Warsaw, Faculty of Mathematics, Informatics and Mechanics. She earned her PhD in mathematics, DG categories and derived categories of coherent sheaves, from the University of Warsaw in 2014. Her research interests lie in the area of algebraic geometry and algebra. She often uses the language of derived categories in the study of those.

Merlin Christ is Professor (Bonn Junior Fellow) in the Mathematical Institute at the University of Bonn. Previously, he was a postdoc at the Institut de Mathématiques de Jussieu - Paris Rive Gauche (IMJ-PRG). He obtained his PhD from the University of Hamburg. His research interests include higher category theory, representation theory, and noncommutative algebraic geometry.

Daniel Juteau has been a CNRS Research Director at LAMFA (Laboratoire Amiénois de Mathématique Fondamentale et Appliquée UMR CNRS 7352) since October 2021. He has been in charge of the GAT (Groupes, Algèbre et Topologie) team since January 2022. He works mainly on the geometric theory of representations, particularly in the modular case.

Paul Wedrich is Professor at the Department of Mathematics at the University of Hamburg, a member of the management committee of the Collaborative Research Center Higher Structures, moduli spaces and integrability, a PI in the Cluster of Excellence Quantum Universe, and spokesperson for the Mathematisches Seminar der Universität Hamburg.