Workshop on Mirror Symmetry and Related Topics, Kyoto 2025

Duration: 15-19 December 2025
Venue: Room 127 (Graduate School of Science Bldg no.3), Department of Mathematics, Kyoto University

The workshop website:
`https://www.math.kyoto-u.ac.jp/~iritani/mirrorsymmetry2025/Workshop2025.html`.

Schedule:

	9:30-10:15	10:15-11:15	11:45-12:45	lunch	14:30-15:30	16:00-17:00
15 Mon	registration	Tanaka	Ueda		Ouchi	Poster Session
16 Tue	⋆	Teleman	Pomerleano		Ward	⋆
17 Wed	⋆	Zhao	Bojko		Johnston	⋆
18 Thu	⋆	Sung	Wu		⋆	Venue Unavailable
19 Fri	⋆	Mizuno	Aleshkin		Miura	⋆

⋆ : free discussion

Speakers and Titles:

Konstantin Aleshkin	
Arkadij Bojko	
Samuel Johnston	
Makoto Miura	
Yuki Mizuno	
Genki Ouchi	
Daniel Pomerleano	*Overconvergent Frobenius intertwiners and p-adic Gamma classes*
Benjamin Sung	
Hiro Lee Tanaka	
Constantin Teleman	
Kazushi Ueda	
Abigail Ward	
Donjian Wu	
Lutian Zhao	*Perverse Sheaf Gopakumar-Vafa/Pandharipande-Thomas Correspondence for Local del Pezzo Surfaces*

Poster Presentations

Daigo Ito	*Geometric construction of quiver tensor products*

Organizers: Hiroshi Iritani, Yukiko Konishi, Atsushi Takahashi

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Daniel Pomerleano

Overconvergent Frobenius intertwiners and p-adic Gamma classes

One of the central notions in the theory of p-adic differential equations is that of an overconvergent Frobenius structure, a concept introduced by Dwork in his study of p-adic cohomology theories. We formulate a conjecture concerning the existence of an overconvergent Frobenius structure on the quantum cohomology of Fano manifolds. The candidate Frobenius structure is built out of Morita's p-adic Gamma function and its conjectural overconvergence is connected to integrality properties of Givental's fundamental solution. We check this conjecture in the case of Fano toric varieties and Grassmanians. This is based on joint work with Shaoyun Bai and Paul Seidel.

Lutian Zhao

Perverse Sheaf Gopakumar-Vafa/Pandharipande-Thomas Correspondence for Local del Pezzo Surfaces

In earlier work we proposed a perverse sheaf version of the Gopakumar-Vafa/Pandharipande-Thomas (GV/PT) correspondence for local del Pezzo surfaces, and carried out calculations for the Gopakumar-Vafa side and for low-degree Pandharipande-Thomas cases, focusing on the total space of local $\mathbb{P}^2$. In this note we update those results and give new evidence for the conjectural correspondence. Using decomposition theorems for relative Hilbert schemes and support results in the style of Migliorini-Shende-Viviani, we show that the cohomological GV/PT correspondence holds up to the part supported on the multiple-curve locus of the Chow variety. This extends the range of cases where the correspondence can be checked and makes clear how the extra terms are concentrated along non-reduced curves. We also discuss links with recent work of Weite Pi, Junliang Shen, Fei Si, Feinuo Zhang on perverse filtration of the same moduli space. These results show how perverse sheaf methods can separate the main terms from the extra contributions in the GV/PT correspondence.