Keyao PENG

Ph.D./Doctorat

Epiphany is not about solving a complex puzzle, but something that was too simple to see.

Paper and Thesis

Keyao Peng. Sheaves and differential equations: An introduction to algebraic analysis, bachelor dissertation, 2019.

Keyao Peng. Milnor-witt motivic cohomology and linear algebraic groups, preprint, 2306.05260, main part of phd thesis, 2023.

Keyao Peng. Milnor-witt motivic cohomology of complements of hyperplane arrangements. *Algebraic & Geometric Topology*, 23(8):3531–3552, 2023.

Education

2020–2023 **Ph.D.**, *Institut Fourier, Université Grenoble Alpes*, Grenoble, France
Algebraic geometry, with advisor *Jean Fasel*

2019–2020 **Master**, *Institut Fourier, Université Grenoble Alpes*, Grenoble, France
Mathématiques fondamentales

2015–2019 **Bachelor**, *Taishan College, Shandong University*, Jinan, China
Majored in mathematics

Academic Activities

Sep 2023	Categorical Symmetries in Quantum Field Theory	*SRS*
Aug 2023	(Speaker) Chow-Witt Rings: Computations and Applications	*BIMSA*
My talk:	*MW-motivic cohomology of linear algebraic groups and Stiefel varieties*	
Jul 2023	Recent Advances in Algebraic K-theory	*IHES*
Apr 2023	Higher Structures in Geometry and Mathematical Physics	*CIRM*
Aug 2022	Motivic Geometry Conference	*Oslo*
Jul 2022	Summer School on the Langlands program	*IHES*
Jun 2022	Harnessing motivic invariants	*Essen*
Jun 2022	Conférence A Toulouse pour Simpson	*Toulouse*
2022	(Speaker) Géométrie réelle, motifs et A1-homotopie	*ENS de Lyon*
My talk:	*Théorie des 6 foncteurs (Theory of six functors)*	
Feb 2022	Logic and higher structures	*CIRM*
Jan 2022	Linear Logic Winter School	*CIRM*
Sep 2021	Unifying Themes in Geometry	*Lake Como*
Sep 2021	The Six-Functor Formalism and Motivic Homotopy Theory	*Milano*

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Sep 2021	Summer School on Derived and Triangulated Categories	*Wuppertal*
July 2021	Summer School "Illustrating Mathematics"	*PCMI*
July 2021	Summer School "Motivic Homotopy"	*PCMI*
Sep 2021	Series Workshops "Expanding Horizons of Inter-universal Teichmüller Theory"	*RIMS*
June 2021	Topos online	*IHES*
June 2021	Tangent Categories and their Applications	*BIRS*
2020–2021	(Speaker) Working group on stratified homotopy theory	*IAS*
My talk:	*Oriented pushouts and oriented fibre products*	
July 2020	Summer School "Motivic, Equivariant and Non-commutative Homotopy Theory"	*IHES*
2021-2023	(Speaker) Séminaire Compréhensible	*Institut Fourier*
My talks:		
May 2023	*How to explain (higher) categories to a geometric topologist? (An introduction to Cobordism Hypothesis)*	
Feb 2021	*Homotopy type theory for mathematicians*	

Teaching

Autumn 2022	**TA**, *Université Grenoble Alpes*, An introduction to algebraic geometry

Skill

Language

Chinese	Mother tongue	English	C1
French	B2	German	A1
Janpanese	A2		

Computer

Language	Typescript, C#, Haskell, Purescript, Lean
Animation	Blender, Unity

Interest

Synthetic Geometry	Study geometry without using analysis, including algebraic geometry, arithmetic geometry, algebraic analysis and more
Homotopy	The geometry of "path", like A1 homotopy theory, homotopy type theory
Higher Structures	Higher means add homotopy to everything, like set, algebra, category, topos, TQFT, etc.