会议名称：厦门算术几何学术会议
会议时间：7月4日-8日
会议地点：海韵园实验楼105报告厅

July 4，Room 105, Laboratory Building, Haiyun Campus

A.M	
10:20	Please wait at the lobby of the hotel, and take a coach to the workshop venue together.
10:40-10:55	Registration
11:00-12:00	Ye Tian，Horizontal non-triviality of Heegner Points
P.M	
14:00-15:00	Fabien PAZUKI : Bad reduction of curves with CM jacobians
15:15-16:15	Dasheng WEI : Open descent and strong approximation
16:15-16:45	Tea Break
16:45-17:45	Shanwen WANG: Factorization of Kato's Euler system
17:45	Photos

July 5，Room 105, Laboratory Building, Haiyun Campus

A.M	
10:40	Please wait at the lobby of the hotel, and take a coach to the workshop venue together.
11:00-12:00	Yongquan HU:The mod p cohomology of Shimura curves
P.M	
14:00-15:00	Xu SHEN:Geometric structures of perfectoid Shimura varieties
15:15-16:15	Jilong TONG: Néron models of algebraic curves
16:15-16:45	Tea Break
16:45-17:45	Olivier BRINON: Zariski-Nagata purity for some rigid spaces

July 6，Room 105, Laboratory Building, Haiyun Campus

A.M	
9:25	Please wait at the lobby of the hotel, and take a coach to the workshop venue together.
9:45-10:45	Lei FU: Rigidity of l-adic Sheaves
11:00-12:00	Anna CADORET:Family of abelian varieties with a fixed isogeny factor

July 7，Room 105, Laboratory Building, Haiyun Campus

	A.M
10:40	Please wait at the lobby of the hotel, and take a coach to the workshop venue together.
11:00-12:00	Jiangxue FANG : Equivariant trace formula of crystals
	P.M
14:00-15:00	Shenghao SUN:On Drinfeld's construction of the automorphic perverse sheaf
15:15-16:15	Weizhe ZHENG : Companions on Artin stacks
16:15-16:45	Tea Break
16:45-17:45	Ke CHEN: On Shimura varieties in Torelli locus

July 8，Room 105, Laboratory Building, Haiyun Campus

	A.M
9:25	Please wait at the lobby of the hotel, and take a coach to the workshop venue together.
9:45-10:45	Ruochun LIU: Rigidity of p-adic local systems and applications to Shimura varieties
11:00-12:00	Bingyong XIE: Derivative of Frobenius and Derivative of Hodge weights
	P.M
14:00-15:00	Yi OUYANG: Birch's lemma over global function fields
15:15	Please wait at the Haiyun Campus, and take a coach to the Lecture of Yitang Zhang.
16:00-17:30	Yitang Zhang(Keli Bulding,克立楼)

Abstracts

JULY 4 , Monday

田野 Ye TIAN : Horizontal non-triviality of Heegner Points

Abstract: It is conjecture that all positive integers congruent to 5, 6, 7 modulo 8 are congruent numbers and 100 % of them are associated with non-trivial Heegner points. In this talk, we sketch that there are at least 50% of them have non-trivial associated Heegner points and therefore are congruent numbers. This is about horizontal quadratic twists and is based on our joint work with Xinyi Yuan and Shouwu Zhang, and also recent work of Smith.

For higher twists, let A be a modular abelian variety over a totally real field F. We sketch our recent result showing that the number of class group characters \chi over CM quadratic extensions K with bounded ramification such that $L'(1, A, \chi) \neq 0$ increases with the absolute value of the discriminant of K. The approach is geometric relying on the Zariski density of CM points in self-products of a quaternionic Shimura variety. This is our joint work with Ashay Burugale.

Fabien PAZUKI : Bad reduction of curves with CM jacobians

Abstract: An abelian variety defined over a number field and having complex multiplication (CM) has potentially good reduction everywhere. If a curve of positive genus which is defined over a number field has good reduction at a given finite place, then so does its jacobian variety. However, the converse statement is false already in the genus 2 case, as can be seen in the entry $[I_0-I_0-m]$ in Namikawa and Ueno's classification table of fibres in pencils of curves of genus 2. In this joint work with Philipp Habegger, our main result states that this phenomenon prevails for certain families of curves.

We prove the following result: Let F be a real quadratic number field. Up to isomorphisms there are only finitely many curves C of genus 2 defined over $\overline{\mathbb{Q}}$ with good reduction everywhere and such that the jacobian Jac(C) has CM by the maximal order of a quartic, cyclic, totally imaginary number field containing F. Hence such a curve will almost always have stable bad reduction at some prime whereas its jacobian has good reduction everywhere. A remark is that one can exhibit an infinite family of genus 2 curves with CM jacobian such that the endomorphism ring is the ring of algebraic integers in a cyclic extension of $\mathbb{Q}$ of degree 4 that contains $\mathbb{Q}(\sqrt{5})$.

魏达盛 Dasheng WEI : Open descent and strong approximation.

Abstract: Let X be a smooth and geometrically integral variety over a number field k. The descent theory of Colliot-Thelene and Sansuc describes arithmetic properties of X in terms of X-torsors under kgroups of multiplicative type. It interprets the Brauer-Manin obstruction to the existence of rational points (or to weak approximation) on X in terms of the descent obstruction defined by universal torsors. In this talk, we will give some progress on the descent theory and its applications to integral points (or to strong approximation).

王善文 Shanwen WANG: Factorization of Kato's Euler system

*Abstract:*In this talk, we report a construction of universal Kato's Euler system and its factorisation.

July 5，Tuesday

胡永泉 Yongquan HU: The mod p cohomology of Shimura curves

*Abstract:*We will describe some recent results on GL_2-representations arised in the mod p cohomology of Shimura curves. It is partially based on a joint work with Haoran Wang.

申旭 Xu SHEN: Geometric structures of perfectoid Shimura varieties

*Abstract:*The theory of perfectoid Shimura varieties was first discovered and studied by Scholze as a key geometric tool to construct automorphic Galois representations in the Langlands program. In this talk, we will present some recent advances on the local and global geometric structures of perfectoid Shimura varieties, as well as some applications.

Jilong TONG: Neron models of algebraic curves

Abstract: In this talk we shall discuss the Néron models of algebraic curves defined over a discrete valuation field. Under some mild conditions, we will show its existence, and its relation with the minimal models of the curves. This is a joint work with Q. Liu.

Olivier BRINON: Zariski-Nagata purity for some rigid spaces

*Abstract:*In a joint work with Farid Mokrane, we have constructed an étale torsor that extends the Igusa tower over some strict neighborhood of the

ordinary locus of the Siegel variety. The construction is indirect, and requires Zariski-Nagata type result.

July 6，Wednesday

扶磊 Lei FU: Rigidity of l-adic Sheaves

*Abstract:*Let X be a smooth connected algebraic curve over an algebraically closed field k, let S be a finite closed subset in X, and let $\mathcal F$ be a lisse ℓ-adic sheaf on $X-S$. We study the deformation of $\mathcal F$. By studying the generic fiber of the universal deformation space,we prove a conjecture of Katz which says that if $\mathcal F$ is irreducible and has rigidity index 2, then $\mathcal F$ is physically rigid.

Anna CADORET: Family of abelian varieties with a fixed isogeny factor

July 7，Thursday

方江学Jiangxue FANG : Equivariant trace formula of crystals.

*Abstract:*In this talk, I will talk about the cohomological trace formula of crystals with a finite group action . As an application, I calculate the special L-values of abelian t-modules. This gives a function field analogue of Stark's conjecture.

孙晟昊 Shenghao SUN: On Drinfeld's construction of the automorphic perverse sheaf

Abstract: Given an irreducible lisse sheaf E of rank n on a projective smooth algebraic curve X, the geometric Langlands correspondence, stated by Deligne and Drinfeld, predicts the existence of an irreducible perverse sheaf on the moduli of vector bundles of rank n on X, known as the geometrization of a spherical automorphic form, that is a cuspidal Hecke-eigensheaf with eigenvalue E. We review Drinfeld's construction of this automorphic perverse sheaf.

郑维喆 Weizhe ZHENG : Companions on Artin stacks

*Abstract:*In his seminal Weil II paper, Deligne made a number of conjectures on Frobenius eigenvalues and traces of l-adic sheaves over a finite field and on l'-companions. In this talk, I will review previous work of Lafforgue, Deligne, and Drinfeld on the conjectures, and discuss

generalizations to Artin stacks.

陈柯 Ke CHEN: On Shimura varieties in Torelli locus

*Abstract:*Using numerical properties of surface fibration, we exclude certain Shimura varieties from the open Torelli locus in the Siegel moduli space. Similar techniques also establish the Coleman-Oort conjecture for the Torelli locus of hyperelliptic curves of high genus. This is a joint work with Xin Lu and Kang Zuo.

Friday

刘若川 Ruochun LIU: Rigidity of p-adic local systems and applications to Shimura varieties

*Abstract:*I will report some recent progress on de Rham rigidity of p-adic local systems as well as its application to Shimura varieties.

谢兵永 Bingyong XIE: Derivative of Frobenius and Derivative of Hodge weights.

*Abstract:*We study the relation netween the derivative of Frobenius and that of Hodge weights for a family of Galois representations with triangluzations. We give a generalization of FontaineMazur invariants and use it to give a formula that generalizes a formula of GreenbergStevens And Colmez.

欧阳毅 Yi OUYANG: Birch's lemma over global function fields

*Abstract:*We obtain a function field version of Birch's Lemma, which reveals non-torsion points in quadratic twists of an elliptic curve over a global function field, where the quadratic twists have many prime factors. The proof is based on Brown's Euler system for Heegner points of function fields and Vigni's result. This is a joint work with Shenxing Zhang.