



China Southeastern Algebraic Geometry Symposium VII

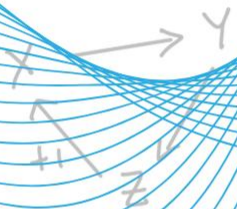
CONFERENCE HANDBOOK

DEC 7 - DEC 8, 2024



$$H^i(X, \mathcal{F}) \cong H^{n-i}(X, \mathcal{F}^\vee \otimes \mathcal{W}_X)^*$$

$$\ell(D) - \ell(K-D) = \deg(D) + 1 - g$$



$$H^n(X, \mathcal{L}) = \bigoplus_{P+Q=n} H^{P,Q}(X)$$



China Southeastern Algebraic Geometry Symposium VII

第七届东南代数几何研讨会

Date: December 7 - December 8, 2024

Venue:

No. 135 Xingang Xi Road
Bldg 266 Room 415
Haizhu District
Guangzhou, Guangdong 510275

Invite Speakers:

Junpeng Jiao	Tsinghua University
Vladimir Lazić	Universität des Saarlandes
Chunyi Li*	The University of Warwick
Wenfei Liu	Xiamen University
Zhiyu Liu*	Zhejiang University
Sheng Rao	Wuhan University
Hao Sun	Shanghai Normal University

Organizers:

Jianxun Hu Changzheng Li Lei Song

Registration: No registration fee for the event. Lodging and meals will be provided by the local host.

Contact:

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Jinyu Yu: yujinyun@mail.sysu.edu.cn

Funded by:

National Natural Science Foundation of China, National Key R & D Program of China, Guangzhou Municipal Science and Technology Bureau

* minicourse

I. Symposium Agenda

Date	Time	Speaker
12/07	8:50–9:00	Opening
	09:00–10:00	Chunyi Li
	10:00–10:20	Group Photo, Coffee Break
	10:20–11:20	Sheng Rao
	11:20–11:30	Coffee Break
	11:30–12:30	Zhiyu Liu
	12:30–14:30	Lunch Break
	14:30–15:30	Chunyi Li
	15:30–16:00	Coffee Break
	16:00–17:00	Wenfei Liu
	18:00	Banquet
	12/08	9:00–10:00
10:00–10:20		Coffee Break
10:20–11:20		Vladimir Lazić
11:20–11:30		Coffee Break
11:30–12:30		Hao Sun
12:30–14:30		Lunch Break
14:30–15:30		Junpeng Jiao
15:30–17:30		Free Discussion

II. Title & Abstract

Title: An introduction to Bridgeland stability condition (I, II, III, IV)

Speakers: Chunyi Li & Zhiyu Liu

Abstract: At the beginning of this century, inspired by the theories of physicist Douglas, Bridgeland introduced the concept of stability conditions on triangulated categories and proved an important foundational theorem, namely that all stability conditions form a complex manifold. Over the past two decades, this theory has found numerous applications in various fields, including algebraic geometry, enumerative geometry, representation theory, category theory, and symplectic geometry.

In this series of four talks, we will start with the slope stability of vector bundles on complex algebraic curves and progress to some recent developments at the forefront of this field. The introductory content is expected to include the following: Slope stability on curves and polarized varieties, King's stability on quiver, Beilinson quiver, triangulated category, bounded derived category of coherent sheaves, Bounded t-structure and slicing. Stability condition and stability manifold, Wall and chamber structure, stability condition on curves. Bogomolov inequality, tilting pair, stability condition on surfaces. Bayer–Macri divisor, Wall-crossing, strange duality.

Title: On structures and discrepancies of klt Calabi–Yau pairs

Speaker: Junpeng Jiao

Abstract: In this talk I will show that the discrepancies of log centers of all klt Calabi–Yau varieties with fixed dimension are in a finite set. I also show how minimal model program facilitates to construct rationally connected fibration structures on log Calabi–Yau pairs. This provides an alternative proof of Cao–Höring's structure theorem for Calabi–Yau cases.

Title: Minimal currents and the Abundance conjecture

Speaker: Vladimir Lazić

Abstract: The Abundance conjecture predicts that on a minimal projective klt pair (X, D) , the adjoint divisor $K_X + D$ is semiample. In this talk, I will explain how currents, and in particular currents with minimal singularities, play a role in recent progress towards a proof of the Abundance conjecture for minimal klt pairs with non-vanishing Euler-Poincaré characteristic.

Title: On the cohomological representations of a finite automorphism group of a nodal curve

Speaker: Wenfei Liu

Abstract: We study the tame action of a finite automorphism group G of a nodal curve C on the cohomology groups of a G -equivariant sheaf F , either coherent or locally constant, and give formulas of Chevalley–Weil type. The focus is on the case where C is stable, and F is a pluricanonical sheaf or the locally constant sheaf. In this case, we may draw several basic conclusions from the Chevalley–Weil type formulas such as the faithfulness of the G -action on

cohomology groups. Some new phenomena, pathological compared to the smooth curve case, are discussed. As applications, we use our formulas to compute the deformation space of the pair (C, G) and the invariants of nonnormal product-quotient surfaces $(C \times D)/G$, where C and D are stable curves and G acts diagonally on $C \times D$. The talk is based on a joint work with 刘青.

Title: Uncountability incentive in deformation theory

Speaker: Sheng Rao

Abstract: I will report mainly the progress on deformation limit and invariance of plurigenera of Moishezon manifolds over the unit disk. In particular, the role of uncountable distribution therein will be explained. If time permits, I will report one recent rigidity result of hyperbolic manifolds under the uncountable distribution condition. This talk is based on several joint works with Mu-Lin Li, I-Hsun Tsai, Kai Wang and Meng-jiao Wang.

Title: Bridgeland stability conditions on fibred threefolds

Speaker: Hao Sun

Abstract: In this talk, we will give a new conjectural construction of stability conditions on the derived category of fibred threefolds. The construction depends on a conjectural Bogomolov-Gieseker type inequality for certain stable complexes. We prove the conjectural Bogomolov-Gieseker type inequalities for ruled threefolds. It gives a type of strong Bogomolov inequality.

III. Accommodation

For Speakers:

Shangyuan Hotel 上苑酒店 (广州中大地铁站):

Address: No. 93 Yile Road, Haizhu District, Guangzhou 广州市海珠区怡乐路 93 号

Hotel Tel.: 020-84480188

Check-in: Provide your name and mention the reservation for the math conference. 请报自己姓名, 说数学研讨会预订即可。

For Registered Participants:

Vertical City Hotel Guangzhou 广州达镖天汇国际酒店 (宜尚 Plus 酒店)

Address: No. 362 Jiangnan South Avenue, Haizhu District, Guangzhou 广州市海珠区江南大道南 362 号

Hotel Tel.: 020-89202888

Check-in: Provide your name and mention the reservation for the math conference. 请报自己姓名, 说数学研讨会预订即可。

IV. Commute to Hotel

From Guangzhou Baiyun International Airport 广州白云国际机场:

Taxi: It takes 50 –70 minutes and costs around 160 RMB (After 11:00 pm, the fare increases to around 210 RMB).

Metro: Take Line 3 to Kecun Station 客村站, and then transfer to Line 8. For speakers, get off at Sun Yat-sen University Station 中大站, then walk for about 10 minutes. For participants, get off at Changgang Station 昌岗站, then walk for about 3 minutes.

From Guangzhou South Railway Station 广州南站:

Taxi: It takes around 40 minutes, and costs around 70 RMB (After 11:00 pm, the fare increases).

Metro:

- For participants: Take Line 2 to Changgang Station 昌岗站, then walk for about 3 minutes.
- For speakers: Take line 2 to Changgang Station 昌岗站, then transfer to Line 8 towards Sun Yat-sen University Station 中大站, then walk for about 10 minutes.

V. List of Attendees

No.	Name	Affiliation
1	Yiran Cheng	Shanghai Mathematics Center
2	Yuxing Cheng	Capital Normal University
3	Chuhui Gao	Xiamen University
4	Tongji Gao	Southern University of Science and Technology
5	Songtao Hu	Xiamen University
6	Chenlu Huang	Southern University of Science and Technology
7	Junpeng Jiao	Tsinghua University
8	Vladimir Lazić	Universität des Saarlandes
9	Chunyi Li	University of Warwick
10	Zhan Li	Southern University of Science and Technology
11	Yongqi Liang	University of Science and Technology of China
12	Peize Liu	University of Warwick
13	Wenfei Liu	Xiamen University
14	Yan Liu	Xiamen University
15	Zhiyu Liu	Zhejiang University
16	Renjie Lü	Xiamen University
17	Sheng Rao	Wuhan University
18	Peng Ren	Fudan University
19	Weili Shao	Xiamen University

20	Hao Sun	Shanghai Normal University
21	Hao Sun	South China University of Technology
22	Yubo Tong	Xiamen University
23	Xiao Wang	Westlake University
24	Haoyu Wu	Tsinghua University
25	Cheng Zhang	Xiamen University
26	Shizhuo Zhang	IBS Center for Geometry and Physics
27	Zeyu Zhao	Xiamen University
28	Zichuan Zheng	Xiamen University
29	Chuyu Zhou	Xiamen University
30	Yuhang Zhou	University of Science and Technology of China
31	Bingyi Chen	Sun Yat-sen University
32	Bowen Deng	Sun Yat-sen University
33	Weiqiang He	Sun Yat-sen University
34	Jianxun Hu	Sun Yat-sen University
35	Runjian Huang	Sun Yat-sen University
36	Huazhong Ke	Sun Yat-sen University
37	Changzheng Li	Sun Yat-sen University
38	Duo Li	Sun Yat-sen University (Zhuhai)

39	Wenyou Li	Sun Yat-sen University
40	Haidong Liu	Sun Yat-sen University
41	Jiayu Song	Sun Yat-sen University
42	Lei Song	Sun Yat-sen University
43	Zhitong Su	Sun Yat-sen University
44	Huanqi Wen	Sun Yat-sen University
45	Chaozhong Wu	Sun Yat-sen University
46	Heng Xie	Sun Yat-sen University
47	Lei Zhang	Sun Yat-sen University (Zhuhai)
48	Yongming Zhang	Sun Yat-sen University (Shenzhen)
49	Shuo Zhao	Sun Yat-sen University

VI. Campus Map



Note



SYSU

博審慎明篤
學問思辨行

中華民國十三年十一月

孫文

國立廣東大學成立訓詞

