不漏 arXiv：2026 年 1 月 27 日[123]

0　精选

2601.18557v1, **Arithmetic volumes of moduli stacks of Shtukas**, Tony Feng, Zhiwei Yun, Wei Zhang

恽老师的可以学习的教材, 而且好像还挺有意思的. 不得不推荐.

2601.18022v1, **A relative Langlands dual realization of $T^*(G/K)$ and derived Satake**, Tsao-Hsien Chen

重要的文章 ().

2601.17894v1, **Rigidity Criterion for Certain Calabi-Yau families**, Ruiran Sun, Chenglong Yu, Kang Zuo

小余的文章, 你们该懂的我说.

2601.17677v1, **Notes on Tate cohomology**, Arpon Raksit

Scholze's world. 不知道是否有助于理解 Tate twist.

2601.17415v1, **Odd magical triples and maximal Higgs bundles**, Enya Hsiao

也许和我们学的 Slodowy slice 关系还挺密切的? 可以看看/算算.

2601.18042v1, **Skeins, q-series, and modularity**, Sunghyuk Park

提了一嘴 Langlands, 推一下.

1　AG

2601.18711v1, **There is no Definable Grauert Direct Image Theorem**, Hélène Esnault, Moritz Kerz

和 Definable complex analytic geometry 相关的文章. 利用 no non-constant alg. morph. from a rational var. Z to an abelian var. A 的性质, 说明了存在 smooth projective definable morphism $f: X \to S$ of definable complex analytic spaces and a definable coherent sheaf $\mathcal{F}$ on X s.t. $f_*\mathcal{F}$ not definable coherent. 从而给出了标题中 DGDIT 的不存在性.

2601.18557v1, **Arithmetic volumes of moduli stacks of Shtukas**, Tony Feng, Zhiwei Yun, Wei Zhang

给出了 Hecke Stack 上的 Tautological classes 的定义, 并以此来定义 Sht_G^μ 的 Arithmetic volume. 在后面的篇幅里计算并利用 L-functions 表示了一些空间的 arithm. volume. 最后通过引入 Tautological rings 的概念来给出一个 Colmez conjecture 的 analog. 值得一看.

2601.18526v1, **On slope unstable Fano varieties**, Yen-An Chen, Ching-Jui Lai

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一篇与 $(-K)$-slope stability 相关的文章. 利用 foliated minila model program 中的进展, 给出了一个刻画 maximal destabilizing sheaf of the tangent sheaf of a Fano variety 的几何的一个方法. 此外, 还给出了 1989 年证明的 $\mathbb{P}^1 \times \mathbb{P}^1$ and $\mathbb{F}^1$ are the only $(-K)$-slope unstable nonsingular del Pezzo surfaces 作为副产物.

2601.18519v1, **Fibers of phase tropicalizations**, Andrei Bengus-Lasnier, Mikhail Shkolnikov

主题是所谓 phase tropicalization. 完全看不懂 orz, 好像仔细地讨论了 SL_2 之 phase tropicalization.

2601.18389v1, **Cohomologically or numerically trivial automorphisms of surfaces of general type**, Fabrizio Catanese, Davide Frapporti

对于 S minimal surface of general type, 希望考虑 $\mathrm{Aut}_{\mathbb{Q}}(S)$ 与其子集 $\mathrm{Aut}_{\mathbb{Z}}(S)$. Cai 证明了存在 C, $|\mathrm{Aut}_{\mathbb{Q}}(S)| \leq C$. 有一个问题是, 这个 maximum 是不是 192. 本文对于 $S = (C_1 \times C_2)/G$ 的情况进行了一些计算.

2601.18249v1, **Relative Dixmier property for Poisson algebras**, Hongdi Huang, Zahra Nazemian, Xin Tang 等

介绍了 relative Dixmier property, 是 Dixmier property 的推广.

Dixmier property: 对于 Poisson k-alg. A, 我们说他满足 Dixmier property, 如果任意 inj. Poisson k-alg. morph. $f : A \to A$ 都是 bijective.

2601.18208v1, **On positivity of CM line bundles on the moduli space of klt good minimal models with $= 1$**, Masafumi Hattori

研究 CM line bundle 的. 主要研究 coarse moduli space of klt good minimal models with Kodaira dimension one.

2601.18180v1, **General tropical convergence of harmonic amoebas**, Takashi Ichikawa

利用 Schottky uniformization theory of degenerating alg. curves 给出了 harmonic amoebas 的 tropical convergence of pointed Riemann surfaces to tropical curves which are not necessarily simple.

tropical geom. 不懂喵.

2601.18169v1, **Lie algebroid connection and Harder-Narasimhan reduction**, Ashima Bansal, Indranil Biswas, Pradip Kumar

$E_P \subset E_G$ holomorphic reduction of G-bundle on X. 证明了 E_P admits a holom. Lie alebroid connection if the reduction is infinitesimally rigid.

2601.18166v1, **Pullback and Direct Image of Parabolic Ample and Parabolic Nef Vector Bundles**, Ashima Bansal, Indranil Biswas

证明了在 finite surj. map of irr. smooth cpx. proj. curves 下, pullback and direct image of a parabolic ample (resp. parabolic nef) vector bundle is again parabolic ample (resp. parabolic nef) iff the original parabolic vector bundle is parabolic ample (resp. parabolic nef.)

2601.18093v1, **Dimers for degenerating families of M-curves**, Takashi Ichikawa

在 Boutillier-Cimasoni-de Tiliere and Bobenko A.I.-Bobenko M.-Suris 在 fixed M-curve 的工作的基础上研究 Dimer models on infinite minimal graphs with Fock's weights for degenerating families of M-curves of any genus. 看不懂喵.

2601.18050v1, **Equivalent computational problems for superspecial abelian surfaces**, Mickaël Montessinos

给出了 endomorphism ring of principally polarised superspecial abelian surfaces 上的计算之间的

一些 equiv. 或者 reduction 关系.

2601.18022v1, **A relative Langlands dual realization of** $T^*(G/K)$ **and derived Satake**, Tsao-Hsien Chen

给出 quasi-split symmetric spaces 上的一种 Bezrukavnikov equivalence. Main result 包括:

$$\mathbb{C}[M_{\check{G},\check{\theta}}] \simeq \mathbb{C}[T^*X].$$

$$D^b_{\check{G}(\mathcal{O})}(\check{X}_{\check{\theta}(F)})_e \simeq \mathrm{Perf}^G(T^*X[2]).$$

2601.17894v1, **Rigidity Criterion for Certain Calabi-Yau families**, Ruiran Sun, Chenglong Yu, Kang Zuo

证明了一个新的 rigidity criterion for familis of polarized CY manifolds. 此外, conjecture 并对一些 case 验证了 a family over a quasi-proj. curve is rigid if it admits a smooth compactification whose singular fiber has only isolated singularities.

证明过程利用了 vanishing cycle exact sequence and limiting mixed Hodge structure with a tensor-prod. decomposition of the associated varition of Hodge structure.

2601.17852v1, **On the genus of a curve in a projective** 3-fold, Vincenzo Di Gennaro, Antonio Rapagnetta, Pietro Sabatino

对于 $X \subset \mathbb{P}^r$ dim 3, degree n 且最多拥有 isolated singularities 的 proj. var. 考虑 $C \subset X$ proj. subscheme of dim 1, deg. $d >> n$. 给出了 arithmetic genus $p_a(C)$ 的界

$$p_a(C) \leq \frac{d}{2n} + \frac{d}{2n}(2\pi_X - 2 - n) + 4\left(\frac{4}{3}n(n+1)\right)^6.$$

2601.17765v1, **Jacobian rings and the infinitesimal Torelli Theorem**, Julius Giesler

在 mixed Hodge component of a nondeg. hypersurface in the torus with a lattice geom. quotient v.s. 的 setting 下, 给出了一个 period map, 利用 Laurent polyn. 研究其 differential, 并以此解决 infinitesimal Torelli theorem.

2601.17677v1, **Notes on Tate cohomology**, Arpon Raksit

利用 Nicolas-Scholze 的打法, 在 3 functor formalism 的背景下 formulate Tate cohomology 的 defn., 并 establish 他的 monoidality 与 functoriality properties.

2601.17672v1, **Hitchin maps and parabolic Hitchin maps on the moduli spaces of Hitchin sheaves on nodal curves**, Usha N. Bhosle

看不懂喵, 研究 (parabolic) Hitchin sheaves on a nodal integral curve Y 构成的模空间上的 Hitchin maps 的 fibers, BNR corresp. 与 restriction of the Hitchin map with very stable bundles 的关系.

2601.17651v1, **Higher order double point formulas via SSM-Thom polynomials**, Reese Lance

利用 Segre-Schwartz-MacPherson (SSM) classes 来研究 double point loci of maps $F : M \to N$ of cpx.mfd.

2601.17619v1, **Representations of the Flat Space Wavefunction**, Tyler Dunaisky

看不懂;w; 跳了

2601.17479v1, **On Proper Descent of Smooth Affine Surfaces with Finite Homotopy**

Rank-Sum, Buddhadev Hajra

研究 smooth complex affine surfaces 在 finite surj. morph. 下 homotopy-theoretic properties 的 descent behaviour. 首先研究 Eilenberg-MacLane property, 并通过反例指出他并不 descend under proper morph. 再引入其 weaker notion: finite homotopy rank-sum property 并证明其 descend under proper morph. between smooth affine surfaces of logarithmic Kodaira dim. at most 0.

2601.17415v1, **Odd magical triples and maximal Higgs bundles**, Enya Hsiao

介绍 extended magical $\mathfrak{sl}_2$-triples. 并说明其 Slodowy slice 与 G-Higgs bundle moduli space 的交恰为 maximal components. 最后, 在 genus 足够大的条件下, 给出几何的刻画, 并证明一个 Cayley correspondence.

2601.17321v1, **On one-leg orbifold topological vertex in refined Gromov-Witten theory**, Jinghao Yu, Zhengyu Zong

在 Gromov-Witten 理论背景下, 定义了 One-leg orbifold topological vertex.

2601.17242v1, **A note on varieties of non-negative Kodaira dimension with polarized self maps**, Ankit Rai

一篇短文. 证明了拥有 k-有理点和 polarized self map 的 smooth proj. var. of non-neg. Kodaira dimension 一定是一个 abelian var. 的 finite free quotient.

2 RT & QA

2601.18786v1, **Representations with the same degree**, Frank Lübeck

一篇小短文, 回答了让-皮埃尔·赛尔问这哥们的一个问题: 所有 connected reductive s.c. alg. gp. of rank > 1 over the complex numbers has infinitely many pairs of irrepn. which are not related by autom. and have the same degree.

没错, 他是 ABCDEFG 地做的.

2601.18709v1, **Weight modules for quantum symmetric pair subalgebras**, Catharina Stroppel, Liao Wang

搞了一种 weight 理论 for quantum analogue of $(\mathfrak{gl}_4, \mathfrak{gl}_2 \times \mathfrak{gl}_2)$ realized as a quantum symmetric pair subalg.

这里也提到了 "magical" operators, 不知道跟上面那个有什么关系. 他在后面还是给出了 defn. of rational repn, BGG resol., Harish-Chandra isom., central char. 等等的定义.

2601.18636v1, **Birational Weyl Group Action on the Symplectic Groupoid and Cluster Algebras**, Woojin Choi

Bondal 介绍了 symplectic groupoid of $\mathcal{A}_n$, the space of $n \times n$ nilp. upper-triangular matrices. 在这篇 paper 里, 他给出了一个 birational Weyl gp. action. on this symplectic groupoid.

也是 quiver 的东西. 但我感觉他更偏 cluster 一点: cycle mutation, cluster DT-transformation 等等.

2601.18484v1, **Tensor decomposition of Demazure crystals for symmetrizable Kac-Moody Lie algebras**, Divya Setia

对于 Kac-Moody Alg. 他有一个 Demazure crystal generated by crystal basis $B_w(\lambda) \subset B(\lambda)$. 本文关心的问题是什么时候 Demazure crystal 的 tensor prod. 仍是 Demazure crystal 的 disjoint union. 他

给出了一个等价条件:

$$v^\lambda_{\min} \in \langle \{s_i | \langle w\mu, \alpha_i^\vee \rangle \le 0\} \rangle.$$

2601.18433v1, **Massless Representations in Conformal Space and Their de Sitter (dS) Restrictions**, Jean-Pierre Gazeau, Hamed Pejhan, Ivan Todorov

162 页的一个 preprint. 与数学物理, 尤其 Conformal Massless Elementary Systems 和所谓 dS Geometry 相关的东西. 光是打开这篇文章我的浏览器就已经拼尽全力了.

2601.18243v1, **Double-bosonization and Majid's conjecture (V): grafting of quantum groups**, Hongmei Hu, Naihong Hu

这篇文章为了搞一个 program, 为了考虑更大的一类量子群: Drinfeld-Jimbo type, 把俩小的合成一个大的. 好像与所谓 Radford-Majid bosonization 有关.

2601.17840v1, **Shifted symplectic structures and Poisson vertex algebra**, Wenda Fang

在 arc spaces 上利用 1-shifted symplectic (QP) data 构造 Poisson vertex algebra 结构. 并在 $\mathbb{P}^1$ 上考虑之, 然后把 classical R-matrix 在 deformation-theoretic geometric framework 的背景下 reinterpret, 得到一个所谓 AKS-type integrable hierarchies. 不太懂.

2601.17445v1, **Cell modules for the Temperley-Lieb algebra in mixed characteristic**, Stuart Martin, Charles Senécal, Robert A. Spencer

研究 Temperley-Lieb algebra $\mathrm{TL}_n^k(\delta)$ in mixed char. 的 representation theory. 这篇文章是完全 diagrammatic 的, 他没有利用 TL_n as endom. alg. of tensor opower of the fundamental repn. of $U_q(\mathfrak{sl}_2)$.

2601.17293v1, **Partial Resolutions and Noncrossing Combinatorics**, Minh-Tâm Quang Trinh, Nathan Williams

对于 finite reductive group, 他计算了出现在 partial Springer resolution 中的 central elements of Hecke algebra. 感觉是 (有些古典的) georep?

2601.18559v1, **Brownian motion on reflection quantum groups. Construction and cutoff**, Jean Delhaye

给出了 free reflection quantum groups 上的 Brownian motion 的 analog, 然后计算了它的 cutoff profile.

2601.18452v1, **On Higher Representation Theory via Categories of type Charge-Conserving–with–Glue**, Paul P Martin, Sarah Almateari, Eric C Rowell

感谢 wzc, 我现在能连上网了. 这篇文章是讲的 higher rep. theory. 他给了一个 strict monoidal sub-cat. of cat. of matrices, 研究上面的 higher rep. theoretic analog. 他主要研究两个问题: classification 与 ordinary braid group repn. that braid repn. generate in towers.

2601.18042v1, **Skeins, q-series, and modularity**, Sunghyuk Park

BPS q-series associated to 3-mfd. 其证明了 q-series 只跟 class of the link in the skein module 有关. 于是给出了 $\mathbb{Z}[q^{\pm 1/4}]$-linear map

$$\mathrm{Sk}(-) \to \mathbb{Z}[q^{\pm 1/4}].$$

(这里我简化了很多, 实际 thm 比这个精细很多). 它给了一种新的 approach to Langlands duality for skein modules through q-series.

2601.17760v1, **Differential calculus on Hopf-Galois extension via the Durdevic braiding**, Arnab Bhattacharjee 看懂了 0 句, 直接跳.

提一嘴吧, 跟什么 principal comodule algebras 有关.

2601.17456v1, **Affinization of dendriform D-bialgebras, Lie bialgebras and solutions of classical Yang-Baxter equation**, Bo Hou

如何利用 dendriform D-bialg. to construct Lie bialgebras, 以及这与他们对应的 Yang-Baxter 方程的解的关系.

2601.17453v1, **Nested ansatz method for Baker-Akhiezer functions**, A. Mironov, A. Morozov, A. Popolitov

什么 3A 级文章. 解释了为什么 derivation of the Noumi-Shirashi function 可以直接应用到 Baker-Akhiezer function 上.

2601.17424v1, **Ecalle's dimorphic transportation and Brown's lifting**, Hanamichi Kawamura

Brown's lifting procedure shows one can solve the double shuffle equations modulo products from solutions of linearized ones. 在这篇文章, 作者指出了这个可以通过 Ecalle's dimorphic transpotation 来描述.

2601.13482, **iCanonical basis arising from quasi-split rank one iquantum group**, Ziming Chen

这哥们是 20 号提交的, 所以没被爬到. 他利用 explicit transition matrices among the icanonical basis, monomial basis 和 standardized canonical basis 来计算了一些 quasi-split rank 1 modified iquantum group 的 icanonical basis.