

PROGRAM OF THE WORKSHOP

All talks take place in the “Salle de Réunions” in “Bâtiment M2” (first floor).

LIFTING 2 BY 2 MATRICES TO 3-BRAIDS, REVISITED [10:15-11:10]

Hiroaki NAKAMURA (Osaka University)

We quickly review classical illuminating ways by Mumford, Rademacher, Ghys et.al. to specify nice set-theoretical sections of the surjection $B_3 \rightarrow SL(2, \mathbb{Z})$ and try to interpret them in the framework of Grothendieck-Teichmueller theory. If time allows, we closely observe special cases of 3-braids, including what we call the "Lissajous 3-braids".

COMPARISON OF SOME ALGEBRAIC AND TOPOLOGICAL INVARIANTS VIA
FUNCTOR CATEGORIES [11:25-12:20]

Antoine TOUZÉ (Lille University)

A certain number of homological invariants can be defined either in an algebraic setting or in a topological setting, leading to different notions. This is the case of Hochschild homology (algebraic) and topological Hochschild homology (topological). This is also the case of the cohomology of group schemes (algebraic) and the cohomology of their discrete group of points (topological).

In this talk, we will explain how the homological invariants above mentioned are related to homology of certain categories, and how this categorical description allows for a comparison between the algebraic notion and its topological counterpart. In particular we will present some recent comparison results obtained in collaboration with A. Djament.

GROTHENDIECK CONJECTURE FOR CONFIGURATION SPACES OF HYPERBOLIC
CURVES OVER FINITELY GENERATED FIELDS OF POSITIVE CHARACTERISTIC
[14:15-15:10]

Koichiro SAWADA (RIMS, Kyoto University)

In anabelian geometry, configuration spaces of hyperbolic curves is often studied as important examples of higher-dimensional anabelian varieties. In this talk, I will first present a brief overview of my researches on higher-dimensional anabelian geometry (over fields of characteristic zero). Then I will discuss a recent result, a joint work with Yuichiro Hoshi

and Shota Tsujimura, on anabelian geometry of configuration spaces of hyperbolic curves over fields of positive characteristic.

PARABOLIC CONNECTIONS

[15:25-16:20]

Niels BORNE (Lille University)

Parabolic connections have been introduced by C.Simpson around 1990. They are, roughly, vector bundles on an algebraic variety endowed with two compatible structures relative to a fixed divisor: a logarithmic connection and a parabolic structure. When the base is a pointed curve, the corresponding moduli spaces are central objects of non abelian Hodge theory.

In this talk, we will take a different perspective and ask: what is the correct notion of a parabolic connection on a higher dimensional base ? What is the relationship between parabolic connections and the algebraic fundamental group of the complement of the divisor?

ON THE STRONG INDECOMPOSABILITY OF THE GROTHENDIECK-TEICHMÜLLER GROUP

[16:35-17:30]

Arata MINAMIDE (RIMS, Kyoto University)

In a previous paper, in the context of the comparison of the Grothendieck-Teichmüller group \widehat{GT} and the absolute Galois group of the field of rational numbers, I posed the following question: (Q) Does \widehat{GT} satisfy strong indecomposability (i.e., the property that every open subgroup has no nontrivial product decomposition)?

Indeed, in the paper, I gave an affirmative answer to a “pro- l version” of (Q). In this talk, we will give an affirmative answer to (Q). This is joint work with Shota Tsujimura.

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