



Corso di Dottorato
08.03.2022 – 17.03.2022
Cohomological aspects of non abelian Hodge theory for curves
in positive characteristic
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Where: Conference Room 1101 “C. D’Antoni” -

Schedule:

08.03.22 - 11:00 - 13:00

10.03.22 - 11:00 - 13:00

15.03.22 - 11:00 - 13:00

17.03.22 - 11:00 - 13:00

(Total: 8 hours)

Program:

1. Summary of non abelian Hodge theory over the complex field.
2. Introduction to the $P = W$ conjecture.
3. Flat connections on vector bundle over curves.
1. Moduli space of Higgs bundles and de Rham Moduli space of flat connections in positive characteristic.
4. Hitchin morphism (Higgs bundles).
5. p -Hitchin morphism (connections).
6. Hodge morphism (t -connections).
2. Cohomological version of non abelian Hodge theory for curves in positive characteristic via the Hodge morphism.
7. Local étale equivalence between Higgs in degree d and de Rham in degree pd .
8. p -multiplicativity.
9. Cohomological results via lifting and specialization.

Organizing Committee: Rapagnetta Antonio

Bibliographical references

- <https://arxiv.org/pdf/math/0008238.pdf>, Laszlo-Pauly.
- <https://arxiv.org/pdf/1201.0741.pdf>, Groechenig.
- <https://arxiv.org/pdf/2104.12970.pdf>, de Cataldo-Zhang.