

Summer School on Geometry of Moduli Spaces of Curves



18 - 22 June 2018
Trieste, Italy

Further information:
<http://indico.ictp.it/event/8319/>
smr3215@ictp.it

Moduli spaces of stable pointed curves play an important role in algebraic geometry. This School will have one course on vector bundles of coinvariants and on conformal blocks and another one on their cohomology classes in relation with those of moduli of abelian varieties.

Description:

The cohomology of moduli spaces of curves and abelian varieties carries several natural classes. We focus on the tautological classes and the cohomology classes related to spaces of modular forms. The problem of determining relationships between the tautological classes turns out to be particularly interesting. Moduli spaces of curves carry vector bundles of coinvariants and conformal blocks; they are invariants of a curve C attached to a Lie group G that are canonically isomorphic to global sections of an ample line bundle on the moduli stack of certain G -bundles on C . These are generalized theta functions in case C is smooth. In case $g=0$, the bundles of co-invariants are globally generated, and their first Chern classes are semi-ample line bundles on the moduli of curves, and shed light on its birational geometry. We can also use the moduli space of curves to learn about generalized theta functions.

Topics:

Cohomology classes on moduli of curves and abelian varieties

- moduli spaces of curves and abelian varieties
- properties of the moduli spaces and their compactifications
- natural cohomology classes and their relations
- tautological classes and cohomology classes related to spaces of modular forms

Vector bundles of coinvariants and conformal blocks

- introduction to moduli spaces of curves
- open problems and F-conjecture
- vector bundles of coinvariants and conformal blocks
- case $g=0$: global generation and semi-ample divisors
- any genus: nef divisors
- Chern classes of bundles of coinvariants
- Global sections of ample line bundles on $\text{Bun}_G(C)$: smooth and nodal case

Directors:

V. BEORCHIA, University of Trieste
A. BORALEVI, Politecnico di Torino
B. FANTECHI, SISSA

Local Organizer:

F. R. VILLEGAS, ICTP

Lecturers:

O. TOMMASI, University of Padua
A. GIBNEY, Rutgers University

How to apply:

Online application:
<http://indico.ictp.it/event/8319/>

Women are particularly encouraged to apply.

Grants:

A limited number of grants are available to support the attendance of selected participants, with priority given to participants from developing countries. There is no registration fee.

Deadline:

15 March 2018



The Abdus Salam
International Centre
for Theoretical Physics
www.ictp.it
Trieste, Italy

