ESI Erwin Schrödinger International Institute for Mathematical Physics

universität wien

DVR 0065528

Teichmüller Theory

Seminar and Lecture Series

Week 6: April 10 - 12, 2013

Organized by: Louis Funar, Yurii Neretin, Athanase Papadopoulos and Bob Penner

- **Wednesday, April 10**
  10:00 – 11:00 Yurii Neretin
  Spaces of conjugacy classes and double cosets, I
  11:00 – 12:00 Yurii Neretin
  Spaces of conjugacy classes and double cosets, II

  Abstract: Let G be a group, H a subgroup. We consider spaces of conjugacy classes and double cosets of G with respect to H for certain types of G, H, Well-representative examples are: 1) $G = U(n) \times \cdots \times U(n)$ (p times) and $K = U(n-k)$ is a diagonal subgroup, $k0$ 2) $G = U(m+pn)$, $K = U(n)\times\cdots\times U(n)$ (p times). 3) $G = S(n) \times \cdots \times S(n)$ (p times) and $K = S(n-k)$ is a diagonal subgroup, $k \geq 0$ Apart from Teichmueller theory, various spaces of such type arise in spectral theory of non-self-adjoint operators, system theory, algebraic geometry, integrable systems, representations of infinite-dimensional groups, mathematical physics. As a result, existing information is rich and dissconnected. Lectures will be concentrated on view from infinite dimensional groups. It appears that there are natural associative multiplications for objects of this type. Visualization of this multiplications allows also to visualize spaces themselves.

  14:00 – 15:00 Cormac Walsh
  The horofunction boundary of Teichmüller space, I

  Abstract: Introduced by Gromov in the late 1970s, the horofunction boundary exists for any metric space. For Teichmueller space with the Teichmueller metric, one can show that the horofunction boundary is the Gardiner-Masur boundary. I will describe what is known about this boundary, and in particular, show how to calculate explicitly the limiting boundary point along an arbitrary geodesic ray. If instead one takes the Thurston metric on Teichmueller space, the horofunction boundary turns out to be just the usual Thurston boundary. I will show how by studying the action of isometries on the boundary, one can determine the isometry group of this metric.

- **Thursday, April 11**
  10:00 – 11:00 Vlad Sergiescu
  Introduction to T group, old and new, I
  11:00 – 12:00 Vlad Sergiescu
  Introduction to T group, old and new, II
  14:00 – 15:00 Cormac Walsh
  The horofunction boundary of Teichmüller space, II

- **Friday, April 12**
  10:00 – 11:00 Yurii Neretin
  Spaces of conjugacy classes and double cosets, III

11:00 – 12:00 Yurii Neretini
Spaces of conjugacy classes and double cosets, IV
14:00 – 15:00 Cormac Walsh
The horofunction boundary of Teichmüller space, III

All lectures take place at the ESI Boltzmann Lecture Hall