

**SPECIAL SEMESTER ON ANABELIAN GEOMETRY AND  
INTER-UNIVERSAL TEICHMÜLLER THEORY  
SPRING 2016**

ORGANIZED  
BY

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ABSTRACT. During the period of February 29th through June 20th, we shall have a detailed study of anabelian geometry, emphasizing on the proof of Grothendieck Conjecture, Absolute Anabelian Geometry, and Inter-universal Teichmüller theory of Shinichi Mochizuki.

We will have 6-8-hour talks weekly. There will be a 2-week long workshop in June, on the frontier of anabelian geometry and the related topics, especially Inter-universal Teichmüller theory and Model theory.

- Time: Every Monday, starting from 9am.
- Location: TBA

The three lecturers Jilong Tong, Fucheng Tan and Chung Pang Mok, who will cover the topics Grothendieck Conjecture, Absolute Anabelian Geometry, and Inter-universal Teichmüller theory respectively, will all speak weekly.

Tong will assume certain knowledge in  $p$ -adic Hodge theory, namely Faltings' integral Hodge-Tate comparison theorem.

Tan will assume the main results in Tong's lectures;

Mok will assume the main results explained by Tong and Tan.

The topics are as follows:

- Jilong Tong: Mochizuki's proof of Grothendieck conjecture in the general case (20 hrs)
- Jilong Tong: Tamagawa's proof of Grothendieck conjecture in the affine case (10 hrs)
- Fucheng Tan: Neukirch-Uchida theorem (4 hrs)
- Fucheng Tan: A version of Grothendieck conjecture for  $p$ -adic local fields (3 hrs)
- Fucheng Tan: Resolution of nonsingularities of families of curves (3 hrs)
- Fucheng Tan: Group-theoretic characterization of cuspidal decomposition groups of hyperbolic curves (10 hrs)
- Fucheng Tan: A combinatorial Grothendieck conjecture (8 hrs)

- Fucheng Tan: The absolute anabelian conjecture for hyperbolic curves of Belyi type (10 hrs)
- Fucheng Tan: Reconstruction of function and base fields from étale fundamental groups (10 hrs)
- Fucheng Tan: The current status of Section Conjecture of Grothendieck (4 hrs)
- Chung Pang Mok: Inter-universal Teichmüller theory, Part I and Part II (20 hrs)