xudongzheng

Education

2010–present	**PhD, Mathematics (expected 2015)**, *University of Illinois at Chicago, Chicago, IL*.
2006–2010	**BS, Chu Kochen Honors College**, *Zhejiang University, Hangzhou, China*.

Senior thesis

Title   *Tate's Thesis*

Supervisors   Prof. Wong Shiu-chun

Abstract   This article presents the essential material in Tate's thesis. By using harmonic analysis on Chevalley's adeles and ideles, Tate provided an elegant proof of the analytic continuation and functional equation for Hecke's ζ-function, and made a remarkable advance over the classical techniques used by Hecke. A later reformulation in a Bourbaki seminar by Weil showed that the essence of Tate's proof could be expressed by distribution theory. We work out the details of S. S. Kudla's article, where Kudla follows Bourbaki and uses the language of distribution theory. We note the connection between an idele class character and an ideal class character. Then we show the collection of the local congruence zeta functions on an elliptic curve actually defines the L-function which turns out to be a Hecke L-function. With the tool developed by Tate, we analyze the L-function of a certain class of elliptic curves. The functional equation and the epsilon factor of the L-function are presented.

Experience

Research

Oct.08–May09	**Student Research Training Program(SRTP)**, *Hangzhou, China*. Organized an undergraduate seminar in algebra and printed out a collection of notes Supervised by Prof. Wong Shiu-chun

Teaching

Aug.10–present	**Graduate Teaching Assistant**, *University of Illinois at Chicago*. Holding three discuss sessions of Intermediate Algebra
Sep.09–Jan.10	**Undergraduate Teaching Assistant**, *Zhejiang University*. Grader of a course on Linear Algebra

Other

Sep.09–Dec.09	**Coordinator**, *Zhejiang University*, A seminar on algebra for ten sophomores .

Other Interests

I like reading and playing badminton.

Publications

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