# WEITONG WANG

## PERSONAL INFORMATION


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## EDUCATION

*2019-Present* University of California-Berkeley

*PhD in Mathematics*

Department of Mathematics
Description: Mainly interested in Number Theory. Working with Professor Melanie Wood on statistics number theory.
Advisor: Prof. Melanie Wood

*2016-2019* University of Wisconsin-Madison

*PhD in Mathematics*

Department of Mathematics
Description: Mainly interested in Number Theory. Worked with Professor Melanie Wood on the study of distribution of class groups of number fields.
Advisor: Prof. Melanie Wood

*2015-2016* University of Wisconsin-Madison

*Master of Arts in Mathematics-Foundations of Advanced Studies*

GPA: 3.56 · Department of Mathematics
Description: This program is designed to pepare students for competitive Ph.D level graduate programs and enhance their chances for entrance to high quality graduate schools.
Advisors: Prof. Shi Jin & Asst. Prof. Saverio Spagnolie

*2011-2015* Nanjing University

*Bachelor of Science*

GPA: 83.78/100 · *Mathematics and Applied Mathematics* · Department of Mathematics
Description: This degree focused more on pure mathematics according to the courses offered.

*Bachelor Thesis*

Character Tables and Frobenius-Schur Indicators of $S_4$ and $\mathbb{Z}_4$
Compute the character tables and Frobenius-Schur indicators of the symmetric group of order 4 and the cyclic group of order 4.
Advisor: Gongxiang Liu · gxliu@nju.edu.cn

## PUBLICATIONS

*2019* Moments and interpretations of the Cohen-Lenstra-Martinet heuristics

*Preprint*

The goal of this paper is to prove theorems that elucidate the Cohen-Lenstra-Martinet conjectures for the distributions of class groups of number fields, and further the understanding of their implications. We start by giving a simpler statement of the conjectures. We show that the probabilities that arise are inversely proportional the to number of automorphisms of structures slightly larger than the class groups. We find the moments of the Cohen-Lenstra-Martinet distributions and prove that the distributions are determined by their moments. In order to apply these conjectures to class groups of non-Galois fields, we prove a new theorem on the capitulation kernel (of ideal classes that become trivial in a larger field) to relate the class groups of non-Galois

fields to the class groups of Galois fields. We then construct an integral model of the Hecke algebra of a finite group, show that it acts naturally on class groups of non-Galois fields, and prove that the Cohen-Lenstra-Martinet conjectures predict a distribution for class groups of non-Galois fields that involves the inverse of the number of automorphisms of the class group as a Hecke-module.
Authors: Weitong Wang, Melanie Wood

## AWARDS

*Henry Schaerf Mathematics Graduate Award* — 2018-2019 · Award Winner

*MCM* — 2014 · Meritorious Winner

*People's Scholarship* — 2015 · Second Prize

2013 · Third Prize

## COMPUTER SKILLS

*Basic* — C++

*Intermediate* — LaTeX

## OTHERS

*Speak Test* — 50

*Interests* — Cooking · Swimming · Work Out

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