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Research field: Number Theory

Key words: Galois representation, moduli space

Present research:

I'm interested in moduli spaces of arithmetic objects and its application to Galois representations. More explicitly, I studied a moduli space of finite flat group schemes, Shimura varieties, which are moduli spaces of abelian varieties or their generalization, and Rapoport-Zink spaces, which are deformation spaces of p -divisible groups. I'm studying also realization of the Langlands correspondences in the cohomology of Shimura varieties and Rapoport-Zink spaces.

Notice for the students:

Please be able to distinguish what you understand and what you don't understand. I write demands on mathematical contents below, but this is one standard and it doesn't imply that you can't do any research if you doesn't satisfy the standard. More important thing is that you understand more basic contents certainly.

It is desirable to understand the class field theory, basics on the algebraic geometry and the theory of etale cohomology of schemes. The representation theory is an important tool in number theory. Although you will learn it as the need arises, please study basic theory of representations of finite groups at least. Further, please study abelian varieties, theory of p -adic Galois representations, representation theory of p -adic algebraic group, rigid geometry, and so on according to your interest.