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Research field: Number theory

Key words:
Arithmetic geometry, p-adic cohomology, arithmetic D-module, ramification theory

Current research:
I'm working in (p-adically) analytic properties of varieties over field of positive characteristic. The theory of p-adic cohomology is an analogue of that of de Rham cohomology for varieties over field of characteristic 0. Whereas cohomological behavior have a lot in common with the l-adic cohomology theory, there are properties that only p-adic theory possess, for example p-adic slopes. Since the foundation of p-adic cohomology theory have mostly done, I want to apply these foundations in the future to the study of, for example, epsilon factors or moduli space of local systems.

Prerequisite:
Familiarity with basics of algebraic geometry, for example the level of Hartshorne, is required. Modern arithmetic geometry is highly developed, and it is not easy to start research only by reading text books. Without saying, studying hard is an important factor to do research, but if one wants to continue for a long time, it is also important to work mathematics with passion and awe. I would be happy to work with those students who wish to work together not just by themselves.