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*$p$ -adic Galois representations and  $p$ -adic geometry*

**Abstract**

Representations of absolute Galois group of  $\mathbb{Q}$  are central to modern algebraic number theory, and to study them, it is often fruitful to study representations of local Galois groups. The most subtle case is when both the local Galois group and the coefficients are  $p$ -adic. Rigid analytic geometry, which is a kind of theory of  $p$ -adic manifolds, also plays an increasingly important role. I will discuss some aspects of these theories, with many examples.