

On the p-adic geometry of Shimura varieties

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The Langlands program is a vast network of conjectures that connect many areas of pure mathematics, such as number theory, representation theory, and harmonic analysis. Shimura varieties are certain algebraic-geometric objects that play an important role in the Langlands program. They have a nice moduli interpretation and they provide, in many cases, a geometric realisation of the global Langlands correspondence. I will illustrate the beautiful geometry of Shimura varieties using the simplest example, that of the modular curve. I will then mention some recent results that use p-adic geometry, specifically the theory of perfectoid spaces.