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Representations of p -adic groups

The Langlands program is a far-reaching collection of conjectures that relate different areas of mathematics including number theory and representation theory. A fundamental problem on the representation theory side of the local Langlands program is the construction of all (irreducible, smooth) representations of p -adic groups.

I intend to provide an overview of our understanding of the complex and mod- ℓ representations of p -adic groups and outline recent developments and applications.