

Abstract

ICM Emmy Noether Lecture

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[Representations of p-adic groups over coefficient rings](#)

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The theory of representations of a p-adic group, for instance $GL(n, Q_p)$ where Q_p is the p-adic completion of \mathbb{Q} is an essential part of the theory of Langlands. The development of its links with number theory has required to study continuous representations on modules over a commutative ring as $\mathbb{Z}[1/p]$ or $\mathbb{Z}/p\mathbb{Z}$. The purpose of the lecture is to provide an overview of basic results and open problems on these representations.