Representations of general linear groups over local rings

Pooja Singla

IIT Kanpur

Abstract: Let F be a non-Archimedean local field with the ring of integers $\mathcal{O}$ and a finite residue field k of an odd characteristic. In contrast to the well-understood representation theory of the finite groups of Lie type $GL_n(k)$ or of the locally compact groups $GL_n(F)$, representations of groups $GL_n(\mathcal{O})$ are considerably less understood. This talk will cover the available tools and the difficulties we encountered in describing the complex representations of $GL_n(\mathcal{O})$. We will also mention some recent results and open problems in this direction.