

# Representations of $GL_2$ and $p$ -adic Symmetric Spaces

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## Abstract

The general aim of representation theory is to classify all representations of an object up to equivalence, where the type of representation considered can vary depending on the context. In this talk, I will discuss one way this can be achieved for abstract representations of  $GL_2$  over a finite field, and smooth representations of  $GL_2$  over a  $p$ -adic field. Both approaches involve natural actions of  $GL_2$  on some space, and these motivate studying actions of  $GL_2$  (over a  $p$ -adic field) on certain rigid analytic spaces in order to better understand a larger class of representations than just smooth. I will talk about the representations which arise from these constructions, and current work which attempts to better understand them.

**Time:** 12 p.m, 2<sup>nd</sup> February 2022

**Location:** B3.02

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