

abstract

Joint IAS/PU Number Theory Seminar
Topic:

Speaker:

Affiliation:

Date:

Time/Room:

Monodromy groups arise naturally in algebraic geometry and in differential equations, and often preserve an integral lattice. It is of interest to know whether the monodromy groups are arithmetic or thin.

In this talk we review the Deligne-Mostow theory and show that for cyclic coverings of degree d of the projective line, with a prescribed number m of branch points and prescribed ramification indices, the monodromy is an arithmetic group provided $m \geq 2d-2$. This is closely related to the arithmeticity of the image of the Burau representation at d -th roots of unity.

We also show that the monodromy associated to certain hypergeometric differential equations of type ${}_nF_{n-1}$ is arithmetic in a number of cases, providing a counterpart to results of Fuchs-Meiri-Sarnak and of Brav-Thomas.