

MA4198 PROJECT PROPOSAL (PROJECT CUM SEMINAR GROUP)

SUPERVISOR'S INFO

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PROJECT ID: PS2610-02

TITLE

Modular Forms and Sums of Squares

BRIEF DESCRIPTION OF PROJECT

How many ways can we represent a positive integer n as a sum of two squares, or three squares, or ten, or any fixed number? This is a basic question in number theory with an extremely rich history, whose answer connects to many different ideas. In this project we will explore this question from a historical perspective, and try to understand what the answer looks like in various situations. In particular, we will study the beautiful relationship between this question and the theory of modular forms.

EXPECTATION/S

Students will be expected to read assigned materials independently and present them in meetings in my office. There will also be a final paper which must be written individually.

PREREQUISITE/S (at level 3000 or below, with at most one course at level 3000)

MA2202, MA3211

READING REFERENCE/S

Topics in classical automorphic forms - Henryk Iwaniec
Other references to be determined