Engineering and Physical Sciences Research Council Doctoral Landscape Award

PROJECT TITLE: The Galois module structure of units of rings of integers

Lead Supervisor: Dr Henri Johnston

Co-Supervisors: Professor Nigel Byott N.P.Byott@exeter.ac.uk

Webpage: https://mathematics.exeter.ac.uk/people/profile/index.php?username=hj241

Project details:

This project is in the general area of algebraic number theory. There is some flexibility in the following outline. Let K/Q be a finite Galois extension and let G=Gal(K/Q). Let O_K denote the ring of integers of K, and let (O_K)* be its unit group. Then G acts on both O_K and (O_K)*. A so-called Minkowski unit has the property that all of its G-conjugates "generate" (O_K)* as an abelian group, at least up to torsion.

The project would investigate circumstances under which Minkowski units exist. As well us the use of tools from integral representation theory, there would also be the opportunity to formulate conjectures, etc. using the results of computations.

Project specific entry requirements: A first class honours undergraduate degree or equivalent in mathematics.

Potential PhD programme of study: PhD in Mathematics

Department: Mathematics and Statistics

Location: Streatham campus, probably Laver building

Please direct project specific enquiries to: Henri Johnston H.Johnston@exeter.ac.uk

Please ensure you read the entry requirements for the potential programme you are applying for.

To Apply for this project please click on the following link - **APPLY HERE**