



Algebra and Number Theory Seminar

Title: The Kolyvagin Conjecture for modular forms

Speaker: Matteo Longo (Padova)

Date: Thu 5th March 2020 at 2:00PM

Location: Seminar Room SCN 1.25

Abstract: Kolyvagin conjecture for elliptic curves was formulated by V. Kolyvagin in the nineties, and predicts the non-triviality of certain cohomology classes constructed from Heegner points. Consequences of this conjecture include the p -part of the Birch and Swinnerton-Dyer conjecture, parity results, and a precise description of the structure of the Tate-Shafarevich group of the elliptic curve. The original conjecture is now a theorem by the work of many people, including W. Zhang, C. Skinner and R. Venerucci. We investigate an analogue of Kolyvagin Conjecture for higher weight modular forms in which Heegner points are replaced by Heegner cycles on Kuga-Sato varieties. As a consequence, we obtain some results on the structure of the Tate-Shafarevich group attached to the modular form, and a p -part of a Bloch-Kato conjecture in analytic rank 1. This is a work in collaboration with Stefano Vigni.

https://maths.ucd.ie/kazim_b/UCD_ANT_Seminar.html