



## Algebra and Number Theory Seminar

**Title:** Hensel-lifting torsion points on Jacobians, and computation of Galois representations from higher étale cohomology

**Speaker:** Nicolas Mascot (TCD)

**Date:** Fri 21st February 2020 at 12:00PM

**Location:** Seminar Room SCN 1.25

**Abstract:** (Note the unusual day and time)

We will describe an algorithm to  $p$ -adically lift torsion points on Jacobians of curves. As an application, we will show how to compute explicitly  $\text{mod } l$  Galois representations occurring in the Jacobians of curves, and also more generally in higher étale cohomology spaces of higher-dimensional varieties. This has many applications, ranging from exploring Langlands's program to point counting in cryptography.

Although the topic may sound abstract, this talk will be very introductory, and will include several concrete examples; for instance, we will apply these techniques to a Galois representation found in the degree 2 étale cohomology of a surface and attached to a modular form of exotic type.

<https://calendar.google.com/calendar/r/agenda?tab=cc>