

---

**ELOISE HAMILTON**, University of Cambridge

*An overview of Non-Reductive Geometric Invariant Theory and its applications*

Geometric Invariant Theory (GIT) is a powerful theory for constructing and studying the geometry of moduli spaces in algebraic geometry. In this talk I will give an overview of a recent generalisation of GIT called Non-Reductive GIT, and explain how it can be used to construct and study the geometry of new moduli spaces. These include moduli spaces of unstable objects (for example unstable Higgs/vector bundles), hypersurfaces in weighted projective space,  $k$ -jets of curves and curve singularities.