MacDonald polynomials and coherent sheaves on elliptic curves

Eric Vasserot

The purpose of this talk is to relate an algebraic object (the spherical double affine Hecke algebra) to a geometric one (D-modules on the moduli stack of bundles on an elliptic curve). We'll explain how it yields a new approach to MacDonald's positivity conjecture, proved by Haiman via the punctual Hilbert scheme of the affine plane.