BRENT PYM, McGill University
Graph complexes and the motivic Galois group

Classical Galois theory studies the symmetries of solutions of polynomial equations. Motivic Galois theory extends this philosophy to symmetries of period integrals on algebraic varieties. It is typically quite difficult to compute the Galois conjugates of a given period integral. I will describe a simple, combinatorial algorithm to compute Galois conjugates for periods of the moduli space of marked curves of genus zero, via graph complexes. While the algorithm itself is quite concrete, the proof that it works involves some new ideas in logarithmic geometry and the theory of operads. This talk is based on forthcoming joint work with Clément Dupont and Erik Panzer.