Title: Explicit Coleman Integration

Abstract: In 1958 Coleman introduced a theory of integration for 1-forms on curves over $\mathbf{Q}_p$ for finding torsion points on the Jacobian of genus $g \geq 2$ curves. One can also use them to find integral and rational points on genus 2 curve. Calculating Coleman integrals turns out to be closely related to calculating the action of a lift of Frobenius on Monsky-Washnitzer cohomology. I will explain how this gives an efficient method for calculating these integrals and, time permitting, a bit about what they are used for. This is joint work with Kiran Kedlaya.