Speaker: Ralph Howard

Title: Bounding the number of lattice points on a convex curve by curvature

Abstract: Let C be a convex curve in the plane with continuous second derivatives. Assume that the curvature is always positive. Let R be a lower bound on the radius of curvature of C. Then we show that the number, N, of lattice points (points with both coordinates integral) satisfies

$$N \leq 2L/(8R)^{1/3}$$

where L is the length of C. The proof is elementary and does not involve much more than third term calculus. This is joint work with Oggie Trifonov.