Séminaire de théorie des nombres

Le 14 mars à 14h

Multiplicative relations on curves and other varieties

Exposé de David Masser

Résumé : Consider an algebraic curve on which none of the affine coordinates $x_1, ..., x_n$ vanishes identically. The intersection with a fixed multiplicative relation $x_1^{a_1} ... x_n^{a_n} = 1$ is usually a finite set. If the exponents are allowed to vary, then we can easily get sets as large as we like, but it was observed by Bombieri, Zannier, and the speaker that these are severely restricted. For example when the curve is defined over the field of algebraic numbers, then the intersection points usually have absolute Weil height which is uniformly bounded above. Further the points on the curve for which there are two independent relations usually form a finite set. We describe some recent progress on such problems, mostly for varieties other than curves. In particular the natural analogues of the above statements hold for a plane ; but only after removing some "anomalous curves" from the plane.