

Exposé court

47 *Geometric progressions of rational points on elliptic curves*

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In 1980, Mohanty conjectured that a non-trivial arithmetic progression of rational points on a Mordell elliptic curve cannot have more than four terms. In earlier joint work with Hector Pasten, we proved that the maximal length of a non-trivial arithmetic progression on an elliptic curve only depends on its rank, hence unconditionally proving Bremner's conjecture about arithmetic progressions on elliptic curves. This also proves Mohanty's conjecture for several families of elliptic curves. One can study geometric progressions on elliptic curves and try to find a bound of the maximal length of non-trivial geometric progressions, depending on similar data. The case of geometric progressions, however, turns out to be much more delicate from a technical point of view and new ideas are necessary. In this talk I will show how to get a bound of this type for geometric progressions on elliptic curves, as an application of Nevanlinna theory and uniform Mordell-Lang.