Der Wissenschaftsfonds.

Institut f. Analysis und Zahlentheorie

Zahlentheoretisches Kolloquium

Dienstag, 19. 7. 2016, ACHTUNG (geänderte Beginnzeit): 15:15 Uhr

ACHTUNG (Ort hat sich geändert): HS D, Kopernikusgasse 24, 3.Stock

On terms of the X-coordinates of Pell equations which belong to some specific sequences

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Let $d \geq 2$ be an integer which is not a square. Let $(X_n, Y_n)_{n \geq 1}$ be the sequence of positive integer solutions (X, Y) of the Pell equation $X^2 - dY^2 = c$, where $c \in \{\pm 1, \pm 4\}$. We then show that there is at most one n such that X_n is a rep-digit in base 10, with a few exceptions in d. The same result holds if we impose that X_n is a rep-digit in any fixed integer base $b \geq 2$ or a member of the Fibonacci sequence. The proofs use linear forms in logarithms of algebraic numbers.

R.Tichy