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The ζ_3-Pell Equation

A classic problem in number theory is the negative Pell equation, asking whether the equation $x^2 - Dy^2 = -1$ has a solution in integers x and y. In this talk, I will present joint work with Stanley Xiao about a generalization of this to cyclic degree three extensions of $\mathbb{Q}(\zeta_3)$, and show that between 63% and 75% of the time (in a suitable sense) there is a solution to the analogous question.