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The Complement of Fermat Curves in the Plane.

A plane algebraic curve is a curve defined implicitly by a relation of the form $f(x, y) = 0$, where $f(x, y)$ is a polynomial in x and y . A curve is said to be rational if it can be parametrized by rational functions $x(t), y(t)$. In this talk we will discuss necessary conditions for a rational curve to be defined on the complement of high degree algebraic Fermat curves. (Received September 24, 2012)