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The positive integral points on the elliptic curve $y^2 = px(x^2 + 2)$. (Chinese. English summary)  
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Summary: In this paper, the positive integral points $(x, y)$ on the elliptic curve $y^2 = px(x^2 + 2)$ are considered. We improve the upper bound for solutions of some quartic Diophantine equations and prove that, if $p \neq 3$, then the elliptic curve has at most two positive integral points $(x, y)$.

MSC:
11D25 Cubic and quartic Diophantine equations  
14G05 Rational points  
14H52 Elliptic curves

Keywords:
elliptic curve; positive integer point; quartic Diophantine equation