

## ON QUARTIC DIOPHANTINE EQUATIONS WITH TRIVIAL SOLUTIONS IN THE GAUSSIAN INTEGERS

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**ABSTRACT.** We show that the quartic Diophantine equations  $ax^4 + by^4 = cz^2$  has only trivial solution in the Gaussian integers for some particular choices of  $a, b$  and  $c$ . Our strategy is by elliptic curves method. In fact, we exhibit two null-rank corresponding families of elliptic curves over Gaussian field. We also determine the torsion groups of both families.

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