Jukić Matić, Ljerka

Non-existence of certain Diophantine quadruples in rings of integers of pure cubic fields


Abstract. In this paper we derive some elements of the rings of integers in the cubic fields of the form $\mathbf{Q}(\sqrt[3]{d})$, where $d$ is even, which cannot be written as a difference of two squares in the considered ring. We show that corresponding Diophantine quadruples do not exist for such elements, what supports the hypothesis mainly proved for the ring of integers and for certain quadratic fields.