

## On extensions of $D(4)$ -triples by adjoining smaller elements

By MARIJA BLIZNAC TREBJEŠANIN (Split) and PAVAO RADIĆ (Split)

**Abstract.** This paper examines the problem of obtaining a  $D(4)$ -quadruple by adding a smaller element to a  $D(4)$ -triple. We prove some relations between elements of observed hypothetical  $D(4)$ -quadruples under which a conjecture of the uniqueness of such an extension holds. Also, it is shown that for any  $D(4)$ -triple, there are at most two extensions with a smaller element.

MARIJA BLIZNAC TREBJEŠANIN &  
PAVAO RADIĆ  
FACULTY OF SCIENCE  
UNIVERSITY OF SPLIT  
RUDERA BOSKOVICA 33  
21000 SPLIT  
CROATIA

---

*Mathematics Subject Classification:* 11D09, 11B37, 11J68.

*Key words and phrases:* Diophantine  $m$ -tuples, Pellian equations, hypergeometric method.