

Blocks of Consecutive Integers and Perfect Squares

Burak Yıldız

Department of Mathematics, Middle East Technical University, Ankara, Turkey

Email: tr.burak.yildiz@gmail.com - yildizb@metu.edu.tr

Abstract: It was shown by Erdős and Selfridge [1] that product of consecutive integers is never a perfect power. Motivated from this result, it was asked by Erdős and Graham [2] whether the same holds for product of disjoint blocks of consecutive integers, or not. Moreover, they conjectured that finitely many integer squares could be obtained from product of two or more disjoint blocks of four or more consecutive integers. Since then, much research has been done concerning the product of disjoint blocks of consecutive integers and some counterexamples to the conjecture has been found for product of three or more blocks of four and five consecutive integers in [3, 4, 5]. Recently, Bennett and Luijk has shown that infinitely many perfect integer squares could be obtained from product of five or more disjoint blocks of five consecutive integers by using a special univariate polynomial parametrization. In this study, additional polynomial parametrizations which are different from the parametrization found by them will be illustrated.

Keywords and phrases: Diophantine equations, polynomial parametrization, perfect square.

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