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Abstracts of Short Communications and Posters

Section:

3. Number Theory and Arithmetic Algebraic Geometry

1991 MS Classification: 11
Tolev Doytchin, University of Plovdiv, Bulgaria
Additive problem with prime numbers of a special type
In 1938 Hua–lo–Ken proved that for every sufficiently large integer N, satisfying the congruence condition $N \equiv 5 (\mathrm{mod}\ 24)$, the equation

$$p_1^2 + p_2^2 + p_3^2 + p_4^2 + p_5^2 = N \tag{1}$$

has a solution in prime numbers $p_1, ..., p_5$.
We are able to prove that under the same conditions, imposed on N, the equation (1) has a solution in prime numbers $p_1, ..., p_5$ such that each of the numbers $p_1 + 2,\ p_2 + 2,\ p_3 + 2,\ p_4 + 2$ has at most 6 prime factors and $p_5 + 2$ has at most 7 prime factors.