

**REFLECTION GROUPS OF THE QUADRATIC  
FORM  $-px_0^2 + x_1^2 + \cdots + x_n^2$  WITH  $p$  PRIME**

ALICE MARK

**Abstract:** We present the classification of reflective quadratic forms  $-px_0^2 + x_1^2 + \cdots + x_n^2$  for  $p$  prime. We show that for  $p = 5$ , it is reflective for  $2 \leq n \leq 8$ , for  $p = 7$  and 17 it is reflective for  $n = 2$  and 3, for  $p = 11$  it is reflective for  $p = 2, 3$ , and 4, and it is not reflective for higher values of  $n$ . We also show that it is non-reflective for  $n > 2$  when  $p = 13, 19$ , and 23. This completes the classification of these forms with  $p$  prime.

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**Key words:** Reflection groups, Coxeter groups.