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**Thai Hoang Le\*** ([1eth@math.ucla.edu](mailto:1eth@math.ucla.edu)), UCLA Mathematics Department, Box 951555, Los Angeles, CA 90095-1555. *Intersective polynomials and the primes.*

Intersective polynomials are polynomials in  $\mathbf{Z}[x]$  having roots every modulo. For example,  $P_1(n) = n^2$  and  $P_2(n) = n^2 - 1$  are intersective polynomials, while  $P_3(n) = n^2 + 1$  is not. We show, using results of Green-Tao and Lucier, that for any intersective polynomial  $h$ , inside any subset of positive relative density of the primes, we can find distinct primes  $p_1, p_2$  such that  $p_1 - p_2 = h(n)$  for some integer  $n$ . Such a conclusion also holds in the Chen primes (where by a Chen prime we mean a prime number  $p$  such that  $p + 2$  is the product of at most 2 primes). (Received September 15, 2009)