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Paul Pollack* (pollack@uga.edu), Boyd Graduate Studies Building, Department of Mathematics, Athens, GA 30602. *Prime splitting in abelian number fields.*

In 1966, Linnik and Vinogradov showed that the smallest prime quadratic residue modulo p is, for large primes p , of size no more than roughly $p^{1/4}$. This was generalized by Elliott five years later: Fix $k \geq 2$. For primes $p \equiv 1 \pmod{k}$, the least prime k th power residue mod p is no more than about $p^{(k-1)/4}$. In this talk, we present a further generalization, estimating from above the least prime which splits in a prescribed way in an abelian extension K/\mathbf{Q} . The Elliott–Linnik–Vinogradov results correspond to looking for a split-completely prime when K/\mathbf{Q} is cyclic of prime conductor. (Received November 29, 2012)