1070-11-269   **Cameron McLeman*** (`mclemanc@umflint.edu`) and **Kirti Joshi**. *Infinite Hilbert Class Field Towers from a Single Ramified Prime.*

Most constructions of fields with an infinite Hilbert class field tower stem from exhibiting a large number of ramified primes. These include, for example, the quadratic number fields studied by Golod and Shafarevich, and the cyclotomic fields studied by Furuta. Motivated by the investigation of fixed fields of Galois representations, we study Hilbert class field towers of number fields with a single ramified prime. In particular, we prove that under a conjecture of Hardy and Littlewood on primes in quadratic progressions, there exist infinitely many prime p such that the number field $\mathbb{Q}(\zeta_p)$ has an infinite Hilbert class field tower. (Received February 14, 2011)