

1042-11-155

Allison M. Pacelli* (apacelli@williams.edu), Williams College, Bronfman Science Center,
Williamstown, MA 01267, and **Michael Rosen**. *Class Number Indivisibility in Function Fields*.

It is known that infinitely many number fields and function fields of any degree m have class number divisible by a given integer n ; many results of this nature construct the fields explicitly. Much less is known about the related question of indivisibility of class numbers of quadratic fields. It has been shown that infinitely many quadratic number fields have class number indivisible by a given prime p , and in fact, quantitative results of this nature are known as well. No explicit constructions of such fields have been given however, and even less is known for higher degree extensions. Much less is known about the function field situation; the only similar result appears to be a construction of Ichimura's for quadratic fields with class number indivisible by 3. Here we construct explicitly infinitely many function fields of any degree m ($3 \nmid m$) over $\mathbb{F}_q(T)$ whose class number is not divisible by 3. We also discuss extensions of this work. (Received August 17, 2008)