

1019-14-28

Hui June Zhu* (zhu@cal.berkeley.edu), Department of mathematics, SUNY at Buffalo, Buffalo, NY 14260. *p*-rank stratification of Artin-Schreier curves.

We give a complete description of the moduli space of Artin-Schreier curves of genus g and p -rank s over an algebraically closed field k of characteristic p . We make explicit the number of its irreducible components, their dimensions, and how they fit in with each other as p -rank s varies in the moduli space of all genus- g Artin-Schreier curves over k .

As an application, when $p=2$, we prove that the moduli space of hyperelliptic curves over k of genus g and 2-rank s is pure of dimension $g-1+s$. (Received July 21, 2006)