

1106-11-392

Qingquan Wu* (qingquan.wu@tamui.edu), 5201 University Blvd, Laredo, TX 78041. *The ramification group filtration on certain function field extensions.*

We investigate the ramification group filtration of Galois extension of function fields, if the Galois group satisfies a certain intersection property. Such a property holds for all finite groups if every Sylow p -subgroup of them is elementary abelian. Note that such groups could be non-abelian. We show how the problem can be reduced to the totally wild ramified case on an p -extension. Our methodology is based on an intimate relationship between the ramification groups of the field extension and the ones of all degree p sub-extensions. Not only do we confirm the Hasse-Arf property holds in this setting, we also prove that the Hasse-Arf divisibility result is the best possible by explicit calculations of the divisors, which are expressed in terms of the different exponents of all those degree p sub-extensions.

This work is in cooperation with Jeffery A. Castañeda as his master thesis. (Received August 26, 2014)