1056-11-757 **Renate Scheidler*** (rscheidl@math.ucalgary.ca), Department of Mathematics and Statistics, University of Calgary, 2500 University Drive NW, Calgary, Alberta T2N 1N4, Canada, and **Qingquan Wu**. *Ramification Groups and Differents in Artin-Schreier Composita.*

Let K be a function field over a perfect constant field of positive characteristic p, and L the compositum of n (degree p) Artin-Schreier extensions of K. Then much of the bahaviour of the degree p^n extension L/K is determined by the bahaviour of the (well understood) degree p intermediate extensions M/K. For example, a place of K totally ramifies/is inert/splits completely in L if and only if it totally ramifies/is inert/splits completely in every M, and all possible decompositions are indeed possible. All the different exponents in L/K are also given by those in all the M/K, and similar results hold for the genus, the regulator, the ideal class number and the divisor class number. In the case $n = 2$, it is also possible to provide an explicit description of the ramification group filtration; an extension of this result to arbitrary n (and in fact to elementary Abelian p extensions that need not be Artin-Schreier) is currently in progress. (Received September 16, 2009)