

1086-11-79

John Jones*, jj@asu.edu, and **David Roberts**. *The Tame-Wild Principle*. Preliminary report.

When computing complete lists of number fields using class field theory, one often has to relate the discriminants of various subfields of a Galois extension with a given Galois group. These may take the form of a product of powers of discriminants of one collection of subfields divides a similar product for another set of subfields.

One can easily determine divisibility conditions for these discriminants under the assumption that all ramification is tame; it is essentially a group theoretic computation. We consider the extent to which relations determined by tame ramification are guaranteed to hold for wildly ramified extensions as well, and prove that they do in some situations. For example, if K is a number field and L is the Galois closure for K/\mathbf{Q} , we prove $|D_K| \geq |D_L|^{\alpha(G)}$ where $\alpha(G)$ is a constant computed from $G = \text{Gal}(L/\mathbf{Q})$ based on tame ramification. (Received July 09, 2012)