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**Guillermo Mantilla-Soler\*** ([gmantelia@gmail.com](mailto:gmantelia@gmail.com)). *An  $\ell - p$  switch trick to obtain a new proof of a criterion for arithmetic equivalence.*

Two number fields are called *arithmetically equivalent* if they have the same Dedekind zeta function. In the 1970's Perlis showed that this is equivalent to the condition that for almost every rational prime  $\ell$  the arithmetic type of  $\ell$  is the same in each field. In the 1990's Perlis and Stuart gave an unexpected characterization for arithmetic equivalence; they showed that to be arithmetically equivalent it is enough for almost every prime  $\ell$  to have the same number of prime factors in each field. Here, using an  $\ell - p$  switch trick, we provide an alternative proof of that fact based on a classical elementary result of Smith from the 1870's. Furthermore, we will explain how our study of the zeta function gives an answer to an open question regarding ramification invariants posted by Perlis and Stuart. Parts of this work is Joint with Tristram Bogart. (Received September 21, 2018)