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**Cris Negron\*** ([negronc@mit.edu](mailto:negronc@mit.edu)) and **Richard Ng** ([rng@math.lsu.edu](mailto:rng@math.lsu.edu)). *Gauge invariants from the antipode of a finite dimensional Hopf algebra.*

Due to a result of Radford, we know that the antipode of a finite dimensional Hopf algebra is always a finite order operator. We show that, for finite dimensional Hopf algebras over a field of characteristic 0 with the Chevalley property, the order of the antipode is a gauge invariant. That is to say, if two such Hopf algebras admit an equivalence between their associated tensor categories of representations, then their antipodes have the same order. In fact, a more refined result holds: the trace of any given power of the antipode is a gauge invariant. I will discuss how this result relates to other invariants, such as the indicators and quasi-exponent. (Received September 19, 2016)