1004-16-256 **Yorck Sommerhäuser*** (`sommerh@mathematik.uni-muenchen.de`), Universität München, Mathematisches Institut, Theresienstr. 39, 80333 München, Germany. *Cauchy's theorem for Hopf algebras.*

Cauchy's theorem states that a finite group contains an element of prime order for every prime that divides the order of the group. Since the exponent of a group is the least common multiple of the orders of all its elements, this can be reformulated by saying that a prime that divides the order of a group also divides its exponent. We prove that, in this formulation, Cauchy's theorem also holds for semisimple Hopf algebras: A prime that divides the dimension of a semisimple Hopf algebra also divides its exponent. This result has been conjectured by P. Etingof and S. Gelaki. It is known in the case of the prime 2. (Received January 25, 2005)