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M. Susan Montgomery* (smontgom@math.usc.edu), Department of Mathematics, University of Southern California, 3620 S. Vermont Ave, KAP 104, Los Angeles, CA 90089-2532. *Computing Frobenius-Schur indicators for doubles of groups.*

Let H be a semisimple Hopf algebra over \mathbb{C} with an irreducible representation V . For each integer n , $1 \leq n \leq \text{Exp}(H)$, one may define $\nu_n(V)$, the n^{th} Frobenius-Schur indicator of V , analogously to the classical case of finite groups. Indicators are *gauge invariants*, that is, an invariant of the tensor category of representations, and have had many nice applications.

Here we discuss the question as to when all of the indicators for $H = D(G)$ are integers. This is always true for G itself, although for Hopf algebras in general they lie in the ring of n^{th} cyclotomic integers [KSZ].

In recent work with M. Iovanov and G. Mason, we show it is true for many groups, such as when G is alternating or symmetric, $PSL_2(q)$, M_{11} , M_{12} , and regular nilpotent groups. However we show there is an irregular nilpotent group of order 5^6 with non-integer indicators.

A harder question is when are the indicators of $D(G)$ non-negative integers. This has been shown for G any dihedral group by M. Keilberg, and for $G = S_n$ for $n \leq 10$ by R. Courter. (Received August 23, 2012)