1075-20-16 **Miodrag Cristian Iovanov*** (yovanov@gmail.com) and **Susan Montgomery**. *On the integrality of the Frobenius Schur indicators of tensor categories.* Preliminary report.

Frobenius-Schur indicators of a group are classical invariants associated to a group, and have a concrete interpretation; they are always integers. These were generalized to (semisimple) Hopf algebras by Montgomery and Linchenko, and then further tensor categories by Mason, Ng, Schauenburg. These indicators proved to be powerful gauge invariants of such categories; for example, the FS indicators can distinguish between nonequivalent tensor categories (representation theories) with the same same fusion rules (character ring). In general, these invarians can be non-integers, but all known examples of quasi-triangular Hopf algebras or symmetric tensor categories have integer FS indicators. This lead several people to raise the question if (and conjecture that) the FS-indicators of symmetric fusion categories categories are integers. We address this problem and present results due to several researchers (S.Montgomery, R.Ng, G.Mason) and the author. We focus on the Drinfeld double of a group, and provide number theoretical equivalent conditions for the FS indicators to be integers, and also some classes of groups for which the indicators of D(G) are ingegers. Using computer algebra, we also find a large interesting class of counterexamples to this conjecture. (Received July 03, 2011)