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19123. *Frobenius divisibility for Hopf algebras*. Preliminary report.

The terminology “Frobenius divisibility”, motivated by Frobenius’ Theorem on finite complex group representations, is now used in connection with similar divisibility results for the degrees of irreducible representations of other algebraic structures. For semisimple Hopf algebras there are many conjectures and theorems of this type, notably Kaplansky’s sixth conjecture and the so-called class equation. Finite dimensional Hopf algebras are known to have the structure of a Frobenius algebra in a way that is deeply intertwined with their Hopf structure. This talk will discuss a unified approach to the majority of known Frobenius divisibility results for Hopf algebras that is based on integrality properties of the Casimir element of the underlying Frobenius structure. (Received August 10, 2015)