

1173-20-82

**Christopher P. Bendel, Daniel K Nakano\*** (nakano@math.uga.edu), **Cornelius Pillen** and **Paul Sobaje**. *On Jantzen's Question and Donkin's Tilting Module Conjecture.*

In this talk, I will first review Jantzen's question posed in 1980 on the existence of Weyl  $p$ -filtrations for Weyl modules for a reductive algebraic group and Donkin's Tilting Module Conjecture (TMC) announced at MSRI in 1990.

Later I will describe how we produce infinite families of counterexamples to Jantzen's question and Donkin's TMC. New techniques to exhibit explicit examples are provided along with methods to produce counterexamples in large rank from counterexamples in small rank. Counterexamples can be produced via our methods for all groups other than when the root system is of type  $A_n$  or  $B_2$ .

These results represent joint work with Christopher Bendel, Cornelius Pillen and Paul Sobaje. (Received September 15, 2021)