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85721. *Non-Abelian Composition Factors of Quadratic Rational Groups*. Preliminary report.

A finite group G is said to be m -rational if $[\mathbb{Q}(\chi) : \mathbb{Q}] \mid m$ for all irreducible characters $\chi \in \text{Irr}(G)$. The structure of rational groups (i.e. $m = 1$) has been studied by R. Gow, W. Feit and G. M. Seitz, and J. G. Thompson. Recently, John McKay posed the question of describing the structure of quadratic rational groups (i.e. $m = 2$). In 2013, J. Tent showed that any composition factor of a solvable quadratic rational group is a cyclic group, C_p , with $p \leq 11$. In this talk, we discuss our findings on the possible non-abelian composition factors of (non-solvable) quadratic rational groups. (Received January 15, 2015)