

Meeting: 1003, Atlanta, Georgia, SS 8A, AMS Special Session on Modular Representation Theory of Finite and Algebraic Groups, I

1003-20-274 **Matthew F. Ragland*** (ragland@ms.uky.edu), 3351 Cove Lake Dr. Apt 74, Lexington, KY 40515. *On Generalizations of Groups in which Normality is a Transitive Relation.*

Let \mathcal{T} -groups and \mathcal{PST} -groups be those groups in which, respectively, normality and Sylow-permutability are transitive. We say G is a \mathcal{T}_o -group if $G/\Phi(G)$ is a \mathcal{T} -group, while G is a Hall- \mathcal{X} group if G contains a normal nilpotent subgroup N such that G/N is an \mathcal{X} -group. Some basic results on \mathcal{T}_o -groups, Hall- \mathcal{T} groups, and Hall- \mathcal{PST} groups will be discussed along with some characterization theorems (in the finite solvable case). A key step in characterizing the above groups is showing that they have a nilpotent hypercommutator which is also a Hall subgroup. Also key is the result that $G/\Phi(G)$ being a \mathcal{PST} -group implies $G/\Phi(G)$ is in fact a \mathcal{T} -group. (Received September 06, 2004)