



**Speaker:** Nadja Hempel  
University of Lyon 1

Tuesday, September 8, 2015

11:00 AM

125 Hayes-Healy Hall

**Title:** Definable groups in generalizations of simple theories

**Abstract:**

Due to work of Poizat, we know that any abelian, nilpotent or solvable subgroup of a stable group is contained in a definable subgroup with the same algebraic properties. Moreover, this remains true for groups in which centralizer satisfies the descending chain condition on centralizers, namely  $M_c$ -groups (Altinel and Baginski). Secondly, Poizat and Wagner proved that the Fitting subgroup, i. e. the group generated by all normal nilpotent subgroup of a stable group is also nilpotent which was later generalized to  $M_c$  groups by Wagner and Derakshan. A well studied generalization of stable theory are simple theories. In the this context, one cannot always find "definable envelops" around abelian, nilpotent or solvable subgroups, but Milliet has shown that working "up to finite index" one can obtain similar results. Using these, Palacin and Wagner have proven that the Fitting subgroup of a group with a simple theory is as well nilpotent. In this talk we will generalize these results to groups which merely satisfies the same chain condition on centralizers as groups definable in simple theory as well as find "definable envelops" for groups definable in  $NTP_2$  theories.