Speaker: Andrew Obus

Title: Toward a classification of local Oort groups

Abstract: The local lifting problem asks: for k an algebraically closed field of characteristic p, which finite Galois extensions of $k[[t]]$ lift to characteristic zero? A Galois group for which all such extensions lift is called a "local Oort group" (for p), and the (now proven) "Oort conjecture" states that cyclic groups are local Oort groups for all p. We will discuss how obstructions to lifting encoded in the wild ramification filtration of the extension rule out all possibilities for local Oort groups other than cyclic groups, dihedral groups, and A_4 (for $p = 2$). Lastly, we will show that A_4 is, in fact, a local Oort group.

In the preliminary (4:00 pm) talk, we will recall the theory of higher ramification filtrations of local fields with perfect residue fields, the relationship between wild ramification and the different, and the relevant Kummer and Artin-Schreier(-Witt) theory.