1116-37-1810 **Joao Alberto de Faria** and **Benjamin Hutz*** (hutzba@slu.edu). *Automorphism Groups and Invariant Theory on PN.* Preliminary report.

Let K be a field and $f : \mathbb{P}^N \to \mathbb{P}^N$ a morphism. There is a natural conjugation action on the space of such morphisms by elements of the projective linear group PGL_{N+1}. The group of automorphisms, or stabilizer group, of a given f for this action is known to be a finite group. In this talk, we discuss a mainly computational problem concerning automorphism groups: Given a finite subgroup of PGL_{N+1} determine endomorphisms of $\mathbb{P}^N$ with that group as subgroup of its automorphism group. In particular, we show that every finite subgroup occurs infinitely often and discuss some associated rationality problems. (Received September 21, 2015)