

Week 6

- 1.** Let M be κ -saturated and strongly κ -homogeneous. Suppose $X \subset M^n$ is definable over M and $A \subset M$ with $|A| < \kappa$ has the property that for every automorphism σ of M , if σ fixes A pointwise then σ fixes X setwise. Show that X is definable over A .
- 2.** Show that a pregeometry (X, cl) is modular if and only if for all $a, b \in X$ and $B \subset X$, with $\dim(ab) = 2$ and $\dim(ab/B) = 1$, there is $c \in \text{cl}(B)$ such that $\dim(ab/c) = 1$.
- 3.** Use the characterisation of modularity in 2. to (re-)prove that ACF_p is not locally modular.