May 12, 2006
Introduction to Compact Groups

Lemma A. *Let A be an abelian group and $\mathcal{F}$ the set of finitely generated subgroups. Then $(\mathcal{A}, \subseteq)$ is a directed set such that $A = \bigcap \mathcal{F}$, and the compact dual group $\widehat{A}$ is naturally isomorphic to the strict projective limit $\lim_{F\in\mathcal{F}} \widehat{F}$ of the strict projective system*

$$\{\widehat{F}, F \in \mathcal{F}; f_{FG}\colon \widehat{G} \to \widehat{F}, F \subseteq G \text{ in } \mathcal{F}\}$$

where $f_{FG}(\chi) = \chi|F$ for $\chi \in \widehat{G}$.

Program for today.

Proof of the Duality Theorem: $\mathbb{AB}$ and $\mathbb{CAB}$ are naturally dual categories.