1151-55-152   **Maru Sarazola*** (`mes462@cornell.edu`). *Constructing Waldhausen categories via cotorsion pairs.* Preliminary report.

Cotorsion pairs were introduced in the '70s as a generalization of projective and injective objects in an abelian category, and were mainly used in the context of representation theory. In 2002, Hovey showed a remarkable correspondence between compatible cotorsion pairs on an abelian category $\mathcal{A}$ and abelian model structures one can define on $\mathcal{A}$. These include, for example, the projective and injective model structures on chain complexes.

In this talk, we turn our attention to Waldhausen categories, and explain how cotorsion pairs can be used to construct different Waldhausen structures on an exact category, with the usual class of admissible monomorphisms as cofibrations, and some freedom to choose the class of desired trivial objects. Since the underlying categories are exact, we are able to rephrase Quillen's Resolution theorem, now in a more homotopical setting that allows for weak equivalences. (Received August 15, 2019)