Department of Mathematics
University of Notre Dame

MODEL THEORY SEMINAR

Guest Speaker: Chieu Minh Tran
University of Notre Dame

Date: Tuesday, March 24, 2020
Time: 11:00 AM
Location: Zoom Seminar

Lecture Title:
On the existence of model companions

NOTE: Zoom Location: https://notredame.zoom.us/j/763507156

Abstract

A theory T to its model companion T^* is what the theory of fields to the theory of algebraically closed fields. As T^* is the theory whose definable sets have syntactically simple descriptions, any model-theoretic analysis of T often goes through T^*. Inconveniently, T^* might not exist. In this talk, I will note that, under favorable situations, the problem of showing T^* exists for a given T can be reduced to the special case where T is a union $T_\cup$ of a family $(T_i)_{i\in I}$ of model-complete theories with pairwise common intersection $T_\cap$. I will then present a machinery to show that such $T_\cup$ has a model companion $T^*_\cup$. A highlight is a generalization of a result from Winkler's thesis: $T^*_\cup$ exists when $T_\cap$ is $\aleph_0$-categorial, $\aleph_0$-stable, and T_i^{eq} eliminates $\exists^\infty$ for each $i \in I$. (Joint with Alex Kruckman and Erik Walsberg)

Chieu Minh Tran - University of Notre Dame