

## ***MODEL THEORY SEMINAR***

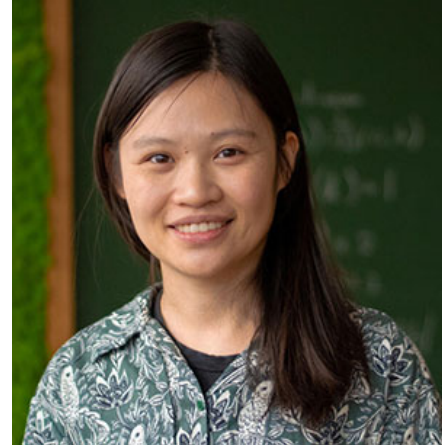
**Guest Speaker: Tingxiang Zou**  
**University of Münster**

**Date:** Tuesday, February 28, 2023

**Time:** 10:30 AM

**Location:** 125 Hayes-Healy Hall

**Zoom URL:** NA



***Lecture Title:***

**Number of rational points of difference varieties in finite difference fields**

***Abstract***

A difference field is a field with a distinguished automorphism. Automorphisms of a finite field is a power of the Frobenius map. In this talk, I will discuss how to estimate the number of rational points of a difference variety, namely a system of difference equations, in a finite field with a distinguished power of Frobenius. Like algebraic geometry, one can assign a dimension, called transformal dimension, to a difference variety. I will present a result which is a difference version of the Lang-Weil estimate with respect to the transformal dimension. This is joint work with Martin Hils, Ehud Hrushovski and Jinhe Ye.