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Speaker: Dr. Sonat Suer, Istanbul Bilgi University

Title: Model Theory and Differential Algebra.

Abstract: A pregeometry is a pair (X, cl) where cl is a closure operator which satisfies the Steinitz's exchange property among a few other properties. Vector spaces together with linear span, and algebraically closed fields together with algebraic closure are the two textbook examples of pregeometries. In our talk, we will show how to attach pregeometries to certain differential algebraic varieties, such as the solution space of the heat equation, and study the combinatorial properties of these pregeometries. If time permits, we will talk about the connections between Zil'ber's dichotomy and diophantine geometry. We may also give some applications to differential algebra about the generalized symmetries of the heat variety. No prior knowledge of model theory or logic will be necessary as we will translate all our notions to algebra.