

## Unlikely Intersections Seminar

*Modular Schanuel, Zilber-Pink, and Existential Closedness with Derivatives*

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**Abstract:** There are three important conjectures at the boundary between model theory, arithmetic geometry, and complex geometry – Schanuel, Zilber-Pink, and Existential Closedness. I will discuss these conjectures for the modular  $j$ -function and mostly focus on novel versions incorporating the derivatives of  $j$ . I will then explain the relationship between them including a new link which is visible only when we consider the derivatives. At the end I will present the functional/differential variants of these conjectures which are all theorems.

Tuesday, April 18 at 2:00 PM in 636 SEO