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The model theoretic geometry of exponentiation

Jonathan Kirby
University of Illinois at Chicago

The complex field with exponentiation is a structure about which surprisingly little is known. Zilber conjectured that it is isomorphic to the "pseudoexponentiation" he constructed using Hrushovski's amalgamation technique. This conjecture is very hard, because it implies Schanuel's conjecture of transcendental number theory and would give a complete description of the algebraic relations between exponentials.

However, Zilber's conjecture can be separated into this difficult number-theoretic part and a geometric part. I will describe how the geometric part is related to the model theory of differential fields, and will outline the progress towards proving it.