"I think, yet the world thinks in me."

– Noam Chomsky

The Trivial Notions Seminar
Proudly Announces

Language and Zeta functions

A talk by
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Abstract

"I saw him on a hill with a telescope." How many ambiguous meanings does this sentence have? Once we have a formal understanding of the English grammar, we can turn this question into simple combinatorics. The linguists Chomsky and Schützenberger have the remarkable observation that, whenever a language can be described using certain grammars enjoying good properties, the ambiguity of the sentences in the language will form good patterns. This allows us to prove properties of many generating series from combinatorics, by simply exhibiting their "grammars"! In particular, this forms one half of Kontsevich's proof of the algebraicity of cetain Zeta-like functions associated to free groups. The other half of Kontsevich's proof uses a known special case of the p-curvature conjecture made by Grothendieck-Katz, which concerns solving differential equations in algebraic geometry.

Wednesday March 11$^{\text{th}}$, at 1:30 pm
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