

“You number theorists study pDEs, and not PDEs. ”

— Anand Patel

The Trivial Notions Seminar  
Proudly Announces

Algebraic solutions of differential equations

A talk by  
Ananth Shankar

**Abstract**

Whether differential equations mod  $p$  have algebraic solutions or not is controlled by an invariant of the differential equation, called the  $p$ -curvature. Grothendieck and Katz conjectured that differential equations in characteristic zero have solutions if and only if almost all  $p$ -curvatures vanish. In this talk, we will indicate why the  $p$ -curvature conjecture is true in certain easy cases. If time permits, we will also relate the  $p$ -curvature to analytic solutions of  $p$ -adic differential equations.

Wednesday, March 23<sup>rd</sup>, at 12:00 pm  
Science Center 222