# *The Mathematics Research Center Distinguished Lecture Series*
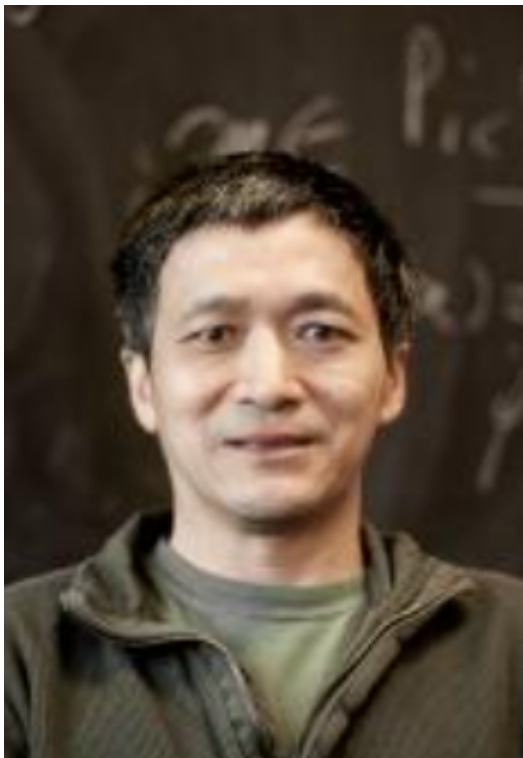## Shou-Wu Zhang (Princeton University)

Shou-Wu Zhang has made significant contributions to number theory and arithmetic algebraic geometry, such as a generalization of the Gross-Zagier theorem from elliptic curves to abelian varieties of GL(2) type over totally real fields and influential work in the theory of arithmetic dynamics.

He has been a Sloan Foundation Fellow, a Guggenheim Fellow, and a Clay Research Scholar, and in 2011 he became a member of the American Academy of Arts and Sciences.

### Lecture 1: Thursday, May 12–4:30 in 380W
**Rational points:  the ABC conjecture and Szpiro's conjecture**.
I will talk about the ABC conjecture and its relation to Szpiro's conjecture,  Milnor's proof of Szpiro's inequality (before it was  known as Szpiro's conjecture) and its relation to hyperbolic geometry, and the relation between Szpiro's conjecture and the Landau–Siegel conjecture on zeros of L-functions.
  (Reception at 3:30pm in the 4th-floor lounge beforehand)

### Lecture 2: Friday, May 13–3:45 in 383N
**Torsion points and preperiodic points: the Manin–Mumford conjecture and its dynamical analogue**.
I will talk about  techniques used in different  proofs of the Manin—Mumford conjecture and its analogue in dynamical systems: p-adic rigid geometry (Raynaud), o-minimality geometry (Pila-Zannier), Arakelov geometry (Ullmo-Zhang), and perfectoid geometry (Xie).

### Lecture 3: Monday May 16–5pm in 384H
**"CM points and derivatives of L-functions: the Andre–Oort conjecture and Colmez' conjecture. "**
I will talk about recent work of Tsimerman about reducing the Andre-Oort conjecture to an averaged version of Colmez' conjecture, and some related work on derivatives of  L-functions by Zhiwei Yun and Wei Zhang using Drinfeld's moduli of Shtukas, and by Xinyi Yuan using Shimura curves.