

# Erwin Schrödinger Lecture

Friday, March 16, 2018 – 15:15 p.m.

Boltzmann Lecture Hall, ESI, Boltzmannngasse 9, Vienna

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## Weierstrass preparation theorem and singularities in arc spaces

*Arc spaces have drawn considerable attention with the rise of the theory of motivic integration. In representation theory and harmonic analysis of/on groups defined over nonarchimedean local fields, arc spaces, and their singularities, also play a prominent role. The problem of understanding singularities of arc spaces becomes thus important both in motivic integration and geometric representation theory.*

*After earlier work of Grinberg and Kazhdan, Drinfeld gave a very convenient description of the formal completion of arc spaces with the help of a version of the Weierstrass preparation theorem with coefficients in Artin local rings. To go beyond the formal completion, we need a version of Weierstrass preparation theorem with arbitrary coefficients. I will describe the problems that arise in extending the Weierstrass preparation theorem to arbitrary coefficient rings and applications to understanding local structures of arc spaces.*

**Ngô Bào Châu** was born in Hanoi in 1972. He trained at École normale supérieure Paris and received his PhD at Orsay under the supervision of Gérard Laumon in 1997. In 2010, Professor Ngô was awarded a Fields Medal for “... his proof of the Fundamental Lemma in the theory of automorphic forms through the introduction of new algebro-geometric methods”. He has been a professor at the University of Chicago since 2010.

The Erwin Schrödinger Lectures are directed towards a general audience of mathematicians and physicists. In particular it is an intention of these lectures to inform non-specialists and graduate students about recent developments and results in some area of mathematics or physics.

The lecture will be followed by an informal reception.

Christoph Dellago  
*Director*