DEPARTMENT OF MATHEMATICS
THE CHINESE UNIVERSITY OF HONG KONG

MATH-IMS Joint Colloquium Series
The Chinese University of Hong Kong

This MATH-IMS Joint Colloquium Series in pure mathematics is organized by the Department of Mathematics and the Institute of Mathematical Sciences (IMS) at the Chinese University of Hong Kong. The series focus on all areas of pure mathematics together with theoretical developments and applications.

Date: March 4, 2021 (Thursday)
Time: 4:30pm – 5:30pm (Hong Kong Time)
Zoom Link: https://cuhk.zoom.us/j/98846779826

Local systems in geometry and arithmetic

Speaker: Professor Hélène Esnault
Freie Universität Berlin

Abstract: Galois laid the foundations of Galois theory and Galois groups, Riemann and Poincaré the ones of algebraic topology and the fundamental group. Grothendieck showed the two worlds are analog and developed the notion of étale fundamental group. Where do we find (continuous) representations of those in mathematics? Essentially the only ones we have at disposal are those of geometric nature. I'll discuss conjectures on the density of those in the parameter space of all representations, and some results giving a small evidence for it (based on joint work with Moritz Kerz and Michael Groechenig).

Bio: Prof. Esnault is a French-German mathematician from the free university of Berlin in Germany. She is a distinguished mathematician specializing in the field of algebraic geometry. Prof. Esnault became the first Einstein Professor at Freie Universität Berlin in 2012, before she was a professor at Universität Duisburg-Essen in Germany. In 2001 she won the Prix Paul Doistau-Émile Blutet of the Académie des Sciences de Paris. In 2003, Esnault and Eckart Viehweg received the Gottfried Wilhelm Leibniz Prize. In 2014 she was elected to the Academia Europaea and is a member of the Academy of Sciences Leopoldina, the Berlin-Brandenburg Academy of Sciences and Humanities and the Europäische Akademie Nordrhein-Westfalen. In 2019, she won the Cantor medal.