

For Favour of posting



**The Hong Kong University of Science and Technology**

**Department of Mathematics**

**Departmental Colloquium**

**The Kardar-Parisi-Zhang (KPZ) models  
and their universality**

by

***Prof. Tomohiro Sasamoto***

**Tokyo Institute of Technology**

**Abstract**

The Kardar-Parisi-Zhang (KPZ) equation is a nonlinear stochastic partial differential equation which was introduced in 1986 to describe the motion of interface. Fluctuations of the interface exhibit universal scaling laws, now known as the KPZ universality. In 2010 the exact formula for the one-point height distribution was discovered by Sasamoto-Spohn and Amir-Corwin-Quastel and there have been many developments since then.

In this talk, we start from explaining the basics about the KPZ equation and its universality. We first present the equation and discuss the issue of its well-definedness. Then we show and explain how to derive the exact formula for the height distribution, and study its limiting behaviors.

Then we discuss various recent developments on the topic. They include the introduction and analysis of various lattice models in the KPZ universality, the connections to integrable systems and representation theory, and generalizations to multi-component systems. Finally we also mention a few outstanding problems on the subject.

***Date: Friday, 23 November 2018***

***Time: 3:00p.m. - 4:00p.m.***

***Venue: Lecture Theatre F  
(near Lifts 25 & 26), HKUST  
All are welcome!***