Distinguished Lectures

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香港城市大學
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DEPARTMENT OF MATHEMATICS

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Global well-posedness and regularity of 3D stochastic Burgers equation with multiplicative noise

by

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Date: 21 July 2022 (Thursday)
Time: 4:00 – 5:00 pm

ABSTRACT

This talk is concerned with a 3D Burgers equation perturbed by a linear multiplicative noise. Using Doss-Sussman transformation, we link the 3D stochastic Burgers equation to a 3D random Burgers equation. Utilising techniques from partial differential equations and probability theory, we first establish the global well-posedness of 3D stochastic Burgers equation with constant diffusion coefficient. Next, by developing a solution which is orthogonal to the gradient of coefficient of the noise, we extend the global well-posedness result to a more general case to allow the diffusion coefficient to be a function on space and time variables. Our results and methodology pave a way to extend regularity results of 1D stochastic Burgers equations to 3D stochastic Burgers equations. This talk is based on a joint work with Zhao Dong (Chinese Academy of Sciences) and Guoli Zhou (Chongqing University).

Registration URL:
https://cityu.zoom.us/meeting/register/tJ0tde-rrz4tHtYI8NRpRtZjiGkzKoKPyvM4

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