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香港浸會大學理學院
HKBU Faculty of Science

Department of Mathematics
Sponsored by Hung Hin Shiu Charitable Foundation

Science Distinguished Lecture Series

On Fourth Order PDEs in Affine Differential Geometry and Complex Differential Geometry

Professor Anmin Li

Sichuan University, China

Academician of Chinese Academy of Sciences

Date: 13 February 2014 (Thursday)

Time: 4:00 pm - 5:00 pm (Preceded by Reception at 3:30 pm)

Venue: 1/F Shiu Pong Hall,
Hong Kong Baptist University

Abstract

Consider the following equation

$$\sum_{i,j=1}^{n} U^{ij} w_{ij} = -L, \quad w = \left[\det \left(\frac{\partial^2 u}{\partial \xi_i \partial \xi_j} \right) \right]^a,$$

where L is some given C^∞ function, $u(\xi)$ is a smooth and strictly convex function defined in a convex domain in $\mathbb{R}^n$, (U^{ij}) denotes the cofactor matrix of the Hessian matrix $\left(\frac{\partial^2 u}{\partial \xi_i \partial \xi_j} \right)$ and $a \neq 0$ is a constant. When $a = -\frac{n+1}{n+2}$ and $L = 0$, the above equation is the equation for affine maximal hyper-surfaces. When $a = -1$ it is called the Abreu equation, which appears in the study of the differential geometry of toric varieties, where L is the scalar curvature of the Kahler metric. In this talk, we will discuss some recent development on the study of the relevant differential equations in the differential geometry.

✦ ✦ ✦   **All are welcome**   ✦ ✦ ✦

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