



香港浸會大學
HONG KONG BAPTIST UNIVERSITY

Department of Mathematics

Distinguished Lecture Series

On the Importance (and Perils) of Being Skew-Symmetric



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Cambridge, UK*

Date: 17 March 2014 (Monday)

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

Venue: RRS905, Sir Run Run Shaw Building,
Ho Sin Hang Campus,
Hong Kong Baptist University

Abstract

In this talk we go back to the very basics of numerical analysis of PDEs, stability theory of finite difference schemes for linear evolution equations with variable coefficients. We prove that a universal “magic wand” renders numerical methods stable: the (first) space derivative should be discretised by a skew-symmetric matrix. The downside, however, is a barrier of 2 on the order of such methods on uniform grids. We derive a general theory coupling grid structure with the availability of skew-symmetric matrices corresponding to high-order methods.



All are welcome



For enquires please contact Ms. Claudia Chui, 3411 2348.

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