



**The Hong Kong Polytechnic University  
Department of Applied Mathematics**

## **Colloquium**

**Design Principles of High Order Solvers for Conservation Laws**

**by**

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The construction of numerical fluxes is an indispensable ingredient of finite volume scheme for conservation laws and related topics, and it is known as solvers nowadays. The celebrated *Riemann solver* is extensively in use and regarded as the reference of any other approximate solvers of first order. With the development of computational technology and practical request, it is necessary to design solvers of high order accuracy both in space and time, which boils down to the resolution of associated generalized Riemann problems (abbr. *GRP*). In this talk I will present principles that should be obeyed to achieve this mission, including the Lax--Wendroff idea, entropy variation, singularity tracking, well-balancedness and asymptotic preserving properties.

**Date : 25 Feb, 2015 (Wednesday)**

**Time : 11:00a.m. – 12:00noon**

**Venue : TU717, The Hong Kong Polytechnic University**

**\* \* \* ALL ARE WELCOME \* \* \***