



DEPARTMENT OF APPLIED MATHEMATICS

應 用 數 學 系

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

**Seminar**

**Stability and convergence of time discretizations of quasi-linear evolution equations of Kato type**

by

**Dr. Balázs Kovács**

**Eberhard Karls Universität Tübingen, Germany**

**Abstract**

Semidiscretization in time is studied for a class of quasi-linear evolution equations in a framework due to Kato, which applies to symmetric first-order hyperbolic systems and to a variety of fluid and wave equations. In the regime where the solution is sufficiently regular, we show stability and optimal-order convergence of the linearly implicit and fully implicit midpoint rules and of higher-order implicit Runge-Kutta methods that are algebraically stable and coercive, such as the collocation methods at Gauss nodes.

**Biography**

Dr. Balázs Kovács is a Postdoctoral Research Fellow at Eberhard Karls Universität Tübingen, Germany. He has been Doctoral Research Fellow at Eberhard Karls Universität Tübingen, from October 2014 to July 2015, and received his PhD in December 2015 in Eötvös Loránd University (ELTE), Hungary.

**Date : 5 April, 2017 (Wednesday)**

**Time : 2:30p.m. – 3:30p.m.**

**Venue : TU801, The Hong Kong Polytechnic University**

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