

Department of Mathematics  
City University of Hong Kong

## Colloquium

Organised by Prof. Tong YANG and Dr Xianpeng HU

### Local-in-time Existence of MHD Contact Discontinuities

by

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#### ***Abstract:***

We discuss recent results for contact discontinuities in ideal compressible magnetohydrodynamics (MHD). MHD contact discontinuities are characteristic discontinuities with no flow across the discontinuity for which the pressure, the magnetic field and the velocity are continuous whereas the density and the entropy may have a jump. For 2D planar MHD flows with a contact discontinuity we prove the local-in-time existence of a unique smooth solution of the corresponding free boundary problem provided that the Rayleigh-Taylor sign condition on the jump of the normal derivative of the pressure is satisfied at each point of the initial discontinuity.

**Date:** 19 January 2018 (Friday)  
**Time:** 4:30 – 5:30pm  
**Venue:** B5-307, Blue Zone, 5<sup>th</sup> Floor, Yeung Kin Man Academic Building (AC1)  
City University of Hong Kong

**\*\* All interested are welcome \*\***

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