



**The Hong Kong University of Science and Technology**

**Department of Mathematics**

**Seminar on Pure Mathematics**

**Stability on two types of partitioning problems**

by

***Prof. Chao XIA***  
***Xiamen University***

**Abstract**

In this talk, two geometric variational problems, so-called partitioning problems for convex domains will be discussed. Type-I is on area minimizing hypersurfaces with volume constraint and Type-II is on area minimizing ones with wetting area constraint. The stationary points for Type-I are free boundary CMC hypersurfaces while the ones for Type-II are minimal hypersurfaces with constant contact angle. We study the stability problem, namely, the second variation for area functional is nonnegative under two types of admissible deformations. We show the uniqueness result for stable type-I or type-II stationary hypersurfaces in a Euclidean ball. This talk is based on joint works with Guofang Wang and Jinyu Guo, respectively.

**Date: Monday, 1 April 2019**

**Time: 3:00p.m. - 4:00p.m.**

**Venue: Room 4504, Academic Building  
(near Lifts 25-26), HKUST**

***All are welcome!***