



Department of Mathematics
The Institute of Mathematical Sciences
The Chinese University of Hong Kong

數學系
數學科學研究所
香港中文大學

Phone: (852) 3943 7988 / 3943 7989 • Fax: (852) 2603 5154 • Email: dept@math.cuhk.edu.hk
Phone: (852) 3943 8036 / 3943 8038 • Fax: (852) 3942 1020 • Email: ims@ims.cuhk.edu.hk
Rm. 220, Lady Shaw Building, The Chinese University of Hong Kong, Shatin, N.T., Hong Kong
Unit 601, Academic Building No. 1, The Chinese University of Hong Kong, Shatin, N.T., Hong Kong

Joint Geometric Analysis Seminar

A Strong Stability Condition on Minimal Submanifolds

Professor Mutao Wang

Department of Mathematics

The Chinese University of Hong Kong / Columbia University

Abstract: It is well known that the square of the distance function to a totally geodesic submanifold of a negatively curved ambient manifold is a convex function. We identify a strong stability condition on minimal submanifolds that generalises the above scenario. In particular, if a closed minimal submanifold Σ is strongly stable, then:

1. The distance function to Σ satisfies a convex property in a neighbourhood of Σ , which implies that Σ is the unique closed minimal submanifold in this neighbourhood, up to a dimensional constraint.
2. The mean curvature flow that starts with a closed submanifold in a C^1 neighborhood of Σ converges smoothly to Σ .

Many examples, including several well-known calibrated submanifolds, are shown to satisfy this strong stability condition. This is based on joint work with Chung-Jun Tsai.

Date: 9 November 2017 (Thursday)
Time: 10:30 a.m. – 11:30 a.m.
Venue: Room 502A, Academic Building No.1,
The Chinese University of Hong Kong, Shatin

All are Welcome!