THE UNIVERSITY   **OF HONG KONG**

Analysis Seminar

An Extension of the Bianchi-Egnell Stability Estimate to Bakry, Gentil, and Ledoux's Generalization of the Sobolev Inequality to Continuous Dimensions and an Application

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Abstract

The Bianchi-Egnell Stability Estimate is a stability estimate or quantitative version of the Sobolev Inequality – it states that the difference of terms in the Sobolev Inequality controls the distance of a given function from the manifold of extremals of the Sobolev Inequality with distance measured in the gradient square or $\dot{H}^1$ norm. In this talk, we present an extension of the Bianchi-Egnell Stability Estimate to Bakry, Gentil, and Ledoux's Generalization of the Sobolev Inequality to Continuous Dimensions. We also demonstrate a deep link between the Sobolev Inequality and a one-parameter family of sharp Gagliardo-Nirenberg (GN) inequalities and how this link can be used to derive a new stability estimate on the one-parameter family of sharp GN inequalities from our stability estimate on Bakry, Gentil, and Ledoux's Generalization of the Sobolev Inequality to Continuous Dimensions.

Date:	February 7, 2018 (Wednesday)
Time:	4:30 – 5:30pm
Venue:	Room 210, Run Run Shaw Bldg., HKU

All are welcome