



THE HONG KONG UNIVERSITY OF SCIENCE & TECHNOLOGY

Department of Mathematics

SEMINAR ON PDE

**Stability in Gagliardo-Nirenberg-Sobolev inequalities:
nonlinear flows, regularity and the entropy method**

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Abstract

We discuss stability results in Gagliardo-Nirenberg-Sobolev inequalities, a joint project with J. Dolbeault, B. Nazaret and N. Simonov. We have developed a new quantitative and constructive "flow method", based on entropy methods and sharp regularity estimates for solutions to the fast diffusion equation (FDE). This allows to study refined versions of the Gagliardo-Nirenberg-Sobolev inequalities that are nothing but explicit stability estimates. Using the quantitative regularity estimates, we go beyond the variational results and provide fully constructive estimates, to the price of a small restriction of the functional space which is inherent to the method.

Date: 16 September 2022 (Friday)

Time: 4:00pm

Zoom Meeting: <https://hkust.zoom.us/j/94348908003> (Passcode: 257490)

All are Welcome!