Mathematics and CS Seminar

Constructive stability for subcritical inequalities on the sphere and beyond

Giovanni Brigati
University Paris-Dauphine

Host: Jan Maas

The interest for Sobolev's inequalites on the Euclidean space started in the 20th century, after the works of Sobolev, Gagliardo, and Nirenberg. Optimal constants and functions were computed by Aubin and Talenti in the 80's. Then, Brezis and Lieb conjectured that the deficit (say, the difference between the two sides) of the inequality could control some distance from the set of optimisers. A first result for Sobolev's inequality, due to Bianchi and Egnell, appeared in the 90s. In the subsequent decades, more and more work has been devoted to stability issues, and in particular to Sobolev's inequality. Sobolev's inequality rewrites equivalently on the sphere, and the known stability results apply thoroughly. Much less was known about Gagliardo-Nirenberg inequalities on the sphere (i.e. the subcritical family interpolating between Sobolev's and Poincaré inequalities), until a recent paper by Rupert Frank.Inspired by the last contribution, a rather complete theory - with constructive stability estimates - has been estabished by Dolbeault, Simonov, and the speaker. The main results and techniques of such theory will be the subject of my talk.

Thursday, February 2, 2023 04:15pm - 05:15pm
Mondi 2, I01.01.008, Central Building

This invitation is valid as a ticket for the ISTA Shuttle from and to Heiligenstadt Station.
Please find a schedule of the ISTA Shuttle on our webpage:
https://ista.ac.at/en/campus/how-to-get-here/ The ISTA Shuttle bus is marked ISTA Shuttle (#142) and has the Institute Logo printed on the side.