Du
27
MARS.
2021

16h30
-
17h30

SÉMINAIRE BOURBAKI

Thomas Bloom — Quantitative Inverse theory of Gowers uniformity norms (after F. Manners)

Exposé en linge. Instruction de connexion à venir

INSCRIPTION

Gowers uniformity norms are the central object of higher-order Fourier analysis, one of the cornerstones of additive combinatorics, and play an important role in both Gowers' proof of Szemerédi's theorem and the Green-Tao theorem. The inverse theorem states that if a function has a large uniformity norm, which is a robust combinatorial measure of structure, then it must correlate with a nilsequence, which is a highly structured algebraic object. This was proved in a qualitative sense by Green, Tao, and Ziegler, but with a proof that was incapable of providing reasonable bounds. In 2018 Manners achieved a breakthrough by giving a new proof of the inverse theorem. Not only does this new proof give a wealth of new insights but it also, for the first time, provides quantitative bounds, that are at worst only doubly exponential. This talk will give a high-level overview of what the inverse theorem says, why it is important, and the new proof of Manners.

INSTITUT HENRI POINCARÉ - UAR839

Sorbonne Université / CNRS
11 rue Pierre et Marie Curie
75231 Paris Cedex 05

HORAIRES

L'institut :
• lundi au vendredi de 8h30 à 18h,
• fermé les jours fériés.

Le musée - Maison Poincaré :
• lundi, mardi, jeudi et vendredi
de 9h30 à 17h30,
• samedi de 10h à 18h,
• fermé le mercredi et le dimanche.