



Frontiers of Mathematics Lecture

Fundamental lemma and Arithmetic Fundamental lemma for the whole spherical Hecke algebra

Abstract

The FL and the AFL for the unit element in the spherical Hecke algebra of the unitary group are recent theorems (of Z. Yun, W. Zhang, R. Beuzart-Plessis, resp. of W. Zhang, A. Mihatsch/W. Zhang, Z. Zhang). Here FL is a statement in p -adic harmonic analysis, whereas AFL is a statement in arithmetic geometry. I will discuss the extension of these statements to an arbitrary element in the spherical Hecke algebra. This is joint work with C. Li and W. Zhang.

Biography

Michael Rapoport is a professor at the University of Bonn, Germany. He obtained his PhD title at the Université Paris-Sud in 1976 under the supervision of Pierre Deligne with his thesis on “Compactifications de l'espace de modules de Hilbert-Blumenthal”.

His research focuses on algebraic geometry and number theory, especially Shimura varieties and their integral models. Prof. Rapoport's notable works include the development of the Rapoport-Zink spaces and contributions towards the local Langlands program. His research has contributed to the understanding of moduli spaces and the relationship between arithmetic and geometry in mathematics.

Prof. Rapoport has received numerous prestigious awards such as the Leibniz Prize of the German Research Foundation (1992), the Gay-Lussac-Humboldt Prize (1999) and the Alexanderson Award of the American Institute of Mathematics (2023). He was an invited speaker at the 1994 International Congress of Mathematicians.



Professor Michael RAPOPORT
University of Bonn

Date :
December 6, 2023 (Wednesday)

Time :
11:00 – 12:00 noon
(Refreshments at 10:30 am)

Venue :
T5, Meng Wah Complex,
The University of Hong Kong