



Mathematics and CS Seminar

(I) Fourier transform as a triangular matrix / (II) Strata in reductive groups

George Lusztig

MIT Mathematics

Host: Tamas Hausel

(I) Fourier transform as a linear map from $L^2(\mathbb{R})$ to $L^2(\mathbb{R})$ has been diagonalized by Hermite in the late 1800's using Hermite polynomials. We are interested in the Fourier transform F on the \mathbb{C} -vector space of functions on a symplectic vector space over the field with two elements. We show that the following substitute of Hermite's result holds: there is a remarkable \mathbb{C} -basis of this vector space in which F acts as a triangular matrix. (II) Let k_p be an algebraically closed field of characteristic p and let G_p be a reductive connected group over k_p of type independent of p ; let W be the Weyl group of G_p . We define a partition of G_p into finitely many strata. Each stratum is a union of conjugacy classes of fixed dimension of G_p . The set of strata is independent of p . It can be viewed as an enlargement of the set of unipotent classes of G_p . It can be identified with the image of a certain map from the set of conjugacy classes in W to the set of irreducible representations of W .

Thursday, October 17, 2024 01:00pm - 03:00pm

Office Bldg West / Ground floor / Heinzl Seminar Room (I21.EG.101)



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.