Topology Seminar

Lior Yanovski

of Max Planck Institute will be speaking on

The chromatic discrete Fourier transform.

on August 23 at 10:00 in
MIT Room Zoom

The classical discrete Fourier transform can be thought of as an isomorphism of rings between the complex group algebra of a finite abelian group A and the algebra of functions on its Pontyagin dual. Hopkins and Lurie have proved an analogous result in the chromatic world, where the field of complex numbers is replaced by the Lubin-Tate spectrum E_n, $the finite abelian group A is replaced by a suitably finite p-power torsion Z-module spectrum, and the Pontryagin dual is modified by an n-fold suspension. From this, they deduce a number of structural results about the category of $K(n)$ $- local spectra, such as affineness and Eilenberg$ $- Moore type formulas for pi$ $- finite spaces. In this talk, I will present a joint work with Barthel, Carmeli, and Sclank, in which we develop the notion of a$ categories. $This allows us, among other things, to extend the above results of Hopkins and Lurie to the T(n)-$ local setting. Furthermore, $we study the interaction of Fourier transforms with categorification suggesting a closer$ $Comenetz duality, we can contemplate the notion of Fourier transform for more general pi-finite spectra than Z-$ modules, $leading to questions intimately related to the behavior of the 'discrepancy spectrum'.$

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