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On the Fourier transform and Vogan's perspective on the Local Langlands Correspondence

Deligne's Fourier transform is an endofunctor defined on the derived category of ℓ -adic sheaves on certain spaces, which maps sheaves with small support to sheaves with large support. It was first applied by Laumon to simplify Deligne's proof of the Weil conjectures, and it has proved to be a fundamental tool in geometric representation theory. In this talk, I am going to introduce the Fourier transform via Grothendieck's function-sheaf dictionary, and I am going to apply it on some small examples that appear in Vogan's perspective of the local Langlands correspondence, just as Cunningham et al. did in their work.