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*Vogan's perspective on the local Langlands Correspondence, the Fourier Transform and the Function Sheaf Dictionary*

Let  $F$  be a  $p$ -adic group, and let  $G$  be a connected reductive algebraic group over  $F$ . The local Langlands correspondence for  $G$  predicts the existence of a partition of the set of equivalence classes of irreducible representations of  $G(F)$ , into certain finite sets called  $L$ -packets, which in turn correspond to equivalence classes of Langlands parameters. Vogan's perspective on the local Langlands correspondence gives a bijection between smooth irreducible representations sharing an infinitesimal parameter and irreducible perverse sheaves on certain moduli space of Langlands parameters.

The main idea of this talk is to show, in the case of  $SO_5$ , how we can use the function-sheaf dictionary to compute the Fourier transforms of some of the simple perverse sheaves appearing in the correspondence. One of the main reasons we are interested in these computations is that the Fourier transform on the geometric side seems to correspond to Aubert's involution on the spectral side!