
MOSHE ADRIAN, University of Utah

Local Langlands correspondence - from real to p-adic groups

Given a connected reductive group \mathbf{G} over the reals \mathbb{R} , any Langlands parameter for $G(\mathbb{R})$ has image inside the normalizer of a maximal torus. Better, it has image inside the "E-group" of a maximal torus. The E-group of a torus is a slight generalization of the L-group of torus (it is not necessarily a semi-direct product), and is key to constructing the local Langlands correspondence for real groups. As Langlands parameters into the L-group of a torus correspond to characters of tori, Langlands parameters into the E-group of a torus correspond to genuine characters of two-fold covers of tori. Recently, Benedict Gross has developed an analogue of the E-group of a torus, for p-adic groups, called "groups of type L". Langlands parameters into groups of type L (which generalize the Langlands parameters of DeBacker/Reeder) give something close to genuine characters of covers of tori, and in many cases they give genuine characters of two-fold covers of tori. We discuss this development and apply it to give a construction of the tame local Langlands correspondence for $PGSp(4, F)$ and $PGL(\ell, F)$, where ℓ is prime. We will then discuss how one might construct a local Langlands correspondence for more general groups using this theory. This work is joint with Joshua Lansky.