

Class field theory and the principal series of $SL(2)$

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We survey the representation theory of $SL(2)$ over a local field F with characteristic zero. We show by a number of examples how the arithmetics of F have implications on the topology of the tempered dual of $SL(2)$ and on the structure of its reduced C^* -algebra. When F has positive characteristic we use the Artin-Schreier symbol to parametrize L -packets of unitary principal series.