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The Local Trace Formula as a Motivic Identity

In 1991, James Arthur published a local trace formula, which is an equality of distributions on the Lie algebra of a connected, reductive algebraic group G over a field F of characteristic zero. His approach was later used by Jean-Loup Waldspurger to give a slight reformulation, identifying the value of a particular distribution on a test function with that of its Fourier transform. We aim to show that this identity may be formulated as an identity of motivic distributions on definable manifolds. By so doing, we would make available the use of the transfer principle to establish the trace formula for groups defined over fields of positive characteristic.