Title: Smooth Transfer of Kloosterman Integrals (the Archimedean case)

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Abstract: We establish the existence of a transfer, which is compatible with Kloosterman integrals, between Schwartz functions on GL(n,R) and Schwartz functions on the variety of non-degenerate Hermitian forms. Namely, we consider an integral of a Schwartz function on GL(n,R) along the orbits of the two sided action of the groups of upper and lower unipotent matrices twisted by a non-degenerate character. This gives a smooth function on the torus. We prove that the space of all functions obtained in such a way coincides with the space that is constructed analogously when GL(n,R) is replaced with the variety of non-degenerate hermitian forms. We also obtain similar results for gl(n,R).