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ON THE TRANSFER OF DISTRIBUTIONS: WEIGHTED ORBITAL INTEGRALS

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0. Introduction. Let G be a connected reductive group over a local field of characteristic 0. The trace formula leads directly to the study of a certain family of distributions on $G(F)$. Understanding how these distributions change as G varies is an important problem. A satisfactory solution of the problem would allow one to compare fundamental spectral data in different trace formulas, and it would go a long way toward establishing new reciprocity laws between automorphic representations. In [8], we stated a conjecture on the comparison of these distributions on different groups. The purpose of this paper is to lay the foundation for a general comparison of trace formulas. In the process, we shall obtain three pieces of evidence for the conjecture.

The distributions in question come from weighted orbital integrals

$$J_M(\gamma, f) = |D(\gamma)|^{1/2} \int_{G_\gamma(F)\backslash G(F)} f\big(x^{-1}\gamma x\big) v_M(x)\, dx,$$
$$\gamma \in M(F) \cap G_{\mathrm{reg}},\ f \in \mathcal{C}(G),$$

in which M is a Levi subgroup of G. These are the terms on the geometric side of the local trace formula [4]. They are also the primary local terms on the geometric

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