1033-37-78 **Corinna Ulcigrai*** (corinna.ulcigrai@bristol.ac.uk), School of Mathematics, University of Bristol, University Walk, Clifton, Bristol, BS8 1TW, England. *Birkhoff sums of non-integrable functions over rotations and IETs.*

We consider Birkhoff ergodic sums of a function with a singularity of type 1/x over a rotation and over an interval exchange transformations (IETs). The asymptotic behaviour of these sums is of interest in the analysis of the ergodic properties of certain classes of area-preserving flows on surfaces. We will first overview some results about the asymptotic growth of these Birkhoff sums over IETs and explain how it depends on whether the singularities are symmetric or asymmetric. Then we will formulate a renewal-type limit theorem for denominators of the continued fraction and explain how this theorem relates to limit theorems for the above sums over rotations. These last results are a joint work with Ya. G. Sinai. (Received September 03, 2007)