Centralizers in the Interval Exchange Group.

Let $\mathcal{E}$ represent the group of interval exchange transformations. For $f \in \mathcal{E}$, the structure of the centralizer $C_\mathcal{E}(f)$ is characterized by the dynamical properties of $f$. If $f$ is topologically minimal, then either $C_\mathcal{E}(f)$ is virtually abelian and contains a torus subgroup, or $C_\mathcal{E}(f)$ is virtually cyclic. These situations are distinguished by the growth rate of the discontinuities of $f$ under iteration. If $f$ has finite order, then $C_\mathcal{E}(f)$ contains a subgroup isomorphic to $\mathcal{E}$. In general, $C_\mathcal{E}(f)$ is characterized by the occurrence of these dynamical situations on maximal invariant subsets of $f$. This characterization of centralizers is used to prove $\text{Aut}(\mathcal{E}) \cong \mathcal{E} \rtimes \mathbb{Z}/2\mathbb{Z}$. (Received September 16, 2008)