

Hurwitz spaces

For a given group G we consider the n -branched G -covers of the punctured disc. That space is homeomorphic to $Hur_{G,n} = \widetilde{Conf}_n \times_{B_n} \text{Hom}(F_n, G)$, and it is called the Hurwitz space. Now for a given conjugacy class c of G we consider the subspace $\widetilde{Conf}_n \times_{B_n} \text{Hom}^c(F_n, G)$. If G is the trivial group, then $Hur_{\{1\},n}$ is $Conf_n$, and in this case homological stability is satisfied. A homological stability result is also satisfied for $Hur_{G,n}^c$, with rational coefficients, for any group of the form $G = A \rtimes \mathbb{Z}/2\mathbb{Z}$, where A is a finite group of odd order, and c the conjugacy class of involutions.