Daniel Frohardt* (`danf@math.wayne.edu`). *The asymptotic genus of a family of groups.*

Let G be a transitive subgroup of S_n. Let g be the smallest positive integer g such that G is isomorphic to the action of $\mathrm{Mon}(f)$ on a generic fiber where f is a covering of the Riemann sphere by a surface of genus g and $\mathrm{Mon}(f)$ is the monodromy group of f. Set $\rho(G) = g/n$. We investigate the asymptotic behavior of $\rho(G)$ for G in various families of actions. For example, if $\mathcal{S}$ is the set of almost simple groups of type $L_2(p)$ acting on the points of the natural module then $\liminf_{G \in \mathcal{S}} \rho(G) = 1/84$ and $\limsup_{G \in \mathcal{S}} \rho(G) = 1/12$. This is joint work with Bob Guralnick and Kay Magaard. (Received December 12, 2014)