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Rohini Ramadas* (ramadas@umich.edu). *Hurwitz Correspondences on $\overline{\mathcal{M}}_{0,N}$.*

We consider Hurwitz spaces \mathcal{H} parametrizing maps between smooth marked genus zero curves, with prescribed ramification. \mathcal{H} defines a rational correspondence from the moduli space \mathcal{M}_{0,N_2} to the moduli space \mathcal{M}_{0,N_1} , parametrizing target and source curves, respectively. For given compactifications X_2 and X_1 of \mathcal{M}_{0,N_2} and \mathcal{M}_{0,N_1} , this induces pushforward maps $\mathcal{H}_* : H_{2k}(X_2) \rightarrow H_{2k}(X_1)$. This *Hurwitz correspondence* arises naturally when studying the Thurston pullback map on Teichmüller space.

We show that \mathcal{H}_* satisfies a desirable stability condition on the stable curves compactifications $\overline{\mathcal{M}}_{0,N}$ and find a natural filtration of $H_{2k}(\overline{\mathcal{M}}_{0,N})$ indexed by the poset {partitions of k } that is preserved by \mathcal{H}_* . We use this filtration to find an alternate modular compactification of $\mathcal{M}_{0,N}$ on which \mathcal{H}_* is stable on half of the homology groups, and prove that no similar result is possible for the other half. We finally discuss applications to computing dynamical degrees of this correspondence. (Received September 20, 2015)