

Mapping class groups and interpolating complexes: Rank

Mahan Mj

RKM Vivekananda University, Belur Math, WB-711 202, India

e-mail: mahan.mj@gmail.com

Communicated by: Ravi Kulkarni

Received: April 17, 2008

Abstract. A family of interpolating graphs $\mathcal{C}(S, \xi)$ of complexity ξ is constructed for a surface S and $-2 \leq \xi \leq \xi(S)$. For $\xi = -2, -1, \xi(S) - 1$ these specialize to graphs quasi-isometric to the marking graph, the pants graph and the curve graph respectively. We generalize the notion of a hierarchy and Theorems of Brock–Farb and Behrstock–Minsky to show that the rank of $\mathcal{C}(S, \xi)$ is r_ξ , the largest number of disjoint copies of subsurfaces of complexity greater than ξ that may be embedded in S . The interpolating graphs $\mathcal{C}(S, \xi)$ interpolate between the pants graph and the curve graph.

2000 Mathematics subject classification. 20F67(Primary), 22E40