Kent, Richard P. IV; Leininger, Christopher J.
Uniform convergence in the mapping class group. (English) Zbl 1153.57013
Ergodic Theory Dyn. Syst. 28, No. 4, 1177-1195 (2008).

In conversation at the 2005 Ahlfors-Bers colloquium, Ed Taylor asked the authors whether there is a formulation of convex cocompactness for the mapping class group, analogous to the following notion for Kleinian groups: a non-elementary Kleinian group Γ is convex cocompact if and only if the action of Γ on the limit set Λ_Γ is a uniform convergence action. Recall that an action of a group G on a perfect compact metrizable space X is a (discrete) convergence action if the diagonal action on the space of distinct triples in X is properly discontinuous, and that it is uniform if this associated action is cocompact.

Theorem 1.3. Let G be a non-elementary subgroup of $Mod(S)$. Then G is convex cocompact if and only if G acts as a uniform convergence group on $Z\Lambda_\Gamma$. Theorem 1.4. Suppose that $G < Mod(S)$ is a non-elementary group. Then G is a convex cocompact if and only if $\Omega_G \neq \varnothing$ and G acts cocompactly on it.

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MSC:

57M50 General geometric structures on low-dimensional manifolds
57M60 Group actions on manifolds and cell complexes in low dimensions

Keywords:

convex cocompactness for mapping class group; Kleinian group; non-elementary group notion

Full Text: DOI arXiv

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