

arXiv.org > math > arXiv:1107.3755

Mathematics > Metric Geometry

Generalized Patterson-Sullivan measures for products of Hadamard spaces

Gabriele Link

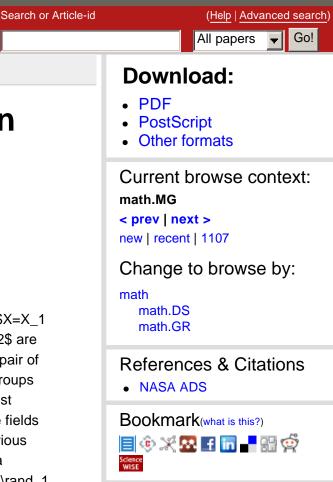
(Submitted on 19 Jul 2011)

Let \$\Gamma\$ be a discrete group acting by isometries on a product \$X=X_1 \times X_2\$ of Hadamard spaces. We further require that \$X_1\$, \$X_2\$ are locally compact and \$\Gamma\$ contains two elements projecting to a pair of independent rank one isometries in each factor. Apart from discrete groups acting by isometries on a product of CAT(-1)-spaces, the probably most interesting examples of such groups are Kac-Moody groups over finite fields acting on the Davis complex of their associated twin building. In a previous article we showed that the regular geometric limit set \$\Lim\$ splits as a product \$F_\Gamma\times P_\Gamma\$, where \$F_\Gamma\subseteq\rand_1 \times \rand_2\$ is the projection of the geometric limit set to \$\rand_1\times \rand_2\$, and \$P_\Gamma\$ encodes the ratios of the speed of divergence of orbit points in each factor. Our aim in this paper is a description of the limit set from a measure theoretical point of view. We first study the conformal density obtained from the classical Patterson-Sullivan construction, then generalize this construction to obtain measures supported in each \$\Gamma\$-invariant subset of the regular limit set and investigate their properties. Finally we show that the Hausdorff dimension of the radial limit set in each \$\Gamma\$-invariant subset of \$\Lim\$ is bounded above by the exponential growth rate introduced in the previous article.

| Comments: | 39 pages |
|--------------|---|
| Subjects: | Metric Geometry (math.MG) ; Dynamical Systems (math.DS); Group Theory (math.GR) |
| MSC classes: | 37F35, 20G44 |
| Cite as: | arXiv:1107.3755 [math.MG] |
| | (or arXiv:1107.3755v1 [math.MG] for this version) |

Submission history

From: Gabriele Link [view email] [v1] Tue, 19 Jul 2011 15:52:24 GMT (36kb)



Link back to: arXiv, form interface, contact.