

HARMONIC MEASURES AND RIGIDITY FOR SURFACE GROUP ACTIONS ON THE CIRCLE

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A measure on a foliated manifold equipped with a leafwise Riemannian metric is harmonic if it is invariant under the leafwise heat flow. In an unfinished article, Thurston proposed a construction of an S^1 connection on a given flat S^1 -bundle over a given hyperbolic surface by using a harmonic measure on the foliation of parallel submanifolds. We will explain that, even if the surface has cusps, the Gauss–Bonnet formula holds for this S^1 connection and the bounded Euler number due to Burger–Iozzi–Wienhard. As an application, we will give an alternative proof of Matsumoto type rigidity theorem of Burger–Iozzi–Wienhard for the Fuchsian actions of hyperbolic surfaces with cusps. This talk is based on a joint work with Masanori Adachi (Shizuoka Univ.) and Yoshifumi Matsuda (Aoyama Gakuin Univ.).