A NEW CHARACTERIZATION OF GROMOV HYPERBOLICITY FOR NEGATIVELY CURVED SURFACES

JOSÉ M. RODRÍGUEZ(1) AND EVA TOURÍS(1)(2)

Abstract

In this paper we show that to check Gromov hyperbolicity of any surface of constant negative curvature, or, Riemann surface, we only need to verify the Rips condition on a very small class of triangles, namely, those obtained by marking three points in a simple closed geodesic. This result is, in fact, a new characterization of Gromov hyperbolicity for Riemann surfaces.

2000 Mathematics Subject Classification. 30F, 30F20, 30F45.

Key words. Gromov hyperbolicity, hyperbolic Riemann surface, closed geodesic.

(1) Research partially supported by a grant from DGI (BFM 2003-04870), Spain.
(2) Research partially supported by a grant from DGI (BFM 2000-0022), Spain.