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Geodesic flows on closed Riemannian manifolds of negative curvature

D. V. Anosov

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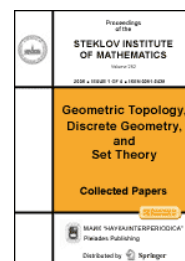
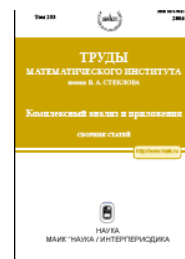
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We improve and extend a result due to M. Kanai about rigidity of geodesic flows on closed Riemannian manifolds of negative curvature whose stable or unstable horospheric foliation is smooth. More precisely, the main results proved here are: (1) Let M be a closed C^∞ Riemannian manifold of negative sectional curvature. Assume the stable or unstable foliation of the geodesic flow $\Pi_t: V \rightarrow V$ on the unit tangent bundle V of M is C^∞ . Assume, moreover, that either (a) the sectional curvature of M satisfies $\forall x \in M, \forall \sigma \in \Sigma_x, \kappa(\sigma) < -K$ or (b) the dimension of M is odd. Then the geodesic flow of M is C^∞ -isomorphic to

Riemannian manifold of negative sectional curvature. Assume the stable or unstable foliation of the geodesic flow [...] on the unit tangent bundle V of M is [...]. Assume moreover that either (a) the sectional curvature of M satisfies [...] or (b) the dimension of M is odd. Then the geodesic flow of M is [...] isomorphic (i. e., conjugate under a [...] diffeomorphism between the unit tangent bundles) to the geodesic flow on a closed Riemannian manifold of constant negative curvature. Item Type: Thesis (Dissertation (Ph.D.)) Degree Grantor: California Institute of Technology. Major Option: Math A. Kramli, "Geodesic flows on compact Riemannian surfaces without focal points", *Studia Sci. Math. Hungar.*, 8 1973, 59–78, Russian. Patrick Eberlein, "Geodesic flow in certain manifolds without conjugate points", *Trans. Amer. Math. Soc.*, 167 1972, 151–170. [15]. Patrick Eberlein, "Geodesic flows on negatively curved manifolds. I", *Ann. of Math.*, 95 1972, 492–510. [16]. Patrick Eberlein, "Geodesic flows on negatively curved manifolds. II", *Trans. Amer.*