

SYMBOLIC DYNAMICS FOR GEODESIC FLOW ON CAT(-1) SPACES

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We show that the geodesic flow on a compact locally CAT(-1) metric space is a Smale flow. The notion of a Smale flow was introduced by Pollicott in his PhD thesis, where it was shown that a version of Bowens construction of symbolic dynamics for Axiom A flows can be extended to this setting. By symbolic dynamics, we mean there exists a suspension flow over a shift of finite type which describes the original dynamics. By taking additional care in the construction, we are able to verify that the roof function can be taken to be Lipschitz in our setting. This is achieved by using carefully chosen geometric rectangles as the building blocks for the construction. With this additional ingredient, the symbolic dynamics machine switches on and a number of ergodic-theoretic results which are true for Axiom A flows are extended to this setting. For example, we obtain that the Bowen-Margulis measure for the geodesic flow is Bernoulli and satisfies the Central Limit Theorem. This is joint work with Dave Constantine (Wesleyan) and Jean-Francois Lafont (Ohio State).