

LEDRAPPIER-YOUNG FORMULA FOR SELF-AFFINE MEASURES

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Abstract: Ledrappier and Young introduced a relation between entropy, Lyapunov exponents and dimension for invariant measures of diffeomorphisms on compact manifolds. We show that self-affine measures on the plane satisfy the Ledrappier-Young formula if the corresponding iterated function system (IFS) satisfies the strong separation condition and the linear parts satisfy the so called dominated splitting. We give a sufficient conditions, inspired by Ledrappier, that the dimensions of such self-affine measure is equal to the Lyapunov dimension. We show some applications, as well.