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Ergodic properties of some sub-hyperbolic meromorphic functions

We present joint work with M. Urbanski on ergodic properties of sub-hyperbolic meromorphic functions with polynomial Schwarzian derivative and, in particular, establish the existence, ergodicity and unicity of a conformal measure with minimal exponent h together with a Bowen's formula showing that this number h equals the Hausdorff dimension of the Julia set of the function. So, as expected, the theory of these sub-hyperbolic functions seems to behave like the theory of hyperbolic functions. However, it turns out that there is a significative difference: there always exists an invariant measure which is absolutely continuous with respect to the above conformal measure but we will see that, in many cases, this measure is only σ -finite.