Invariant Measures and Natural Extensions

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Abstract. We study ergodic properties of a family of interval maps that are given as the fractional parts of certain real Möbius transformations. Included are the maps that are exactly \( n \)-to-1, the classical Gauss map and the Renyi or backward continued fraction map. A new approach is presented for deriving explicit realizations of natural automorphic extensions and their invariant measures.