Finite and infinite measures for adic transformations

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An adic transformation, as defined by Vershik, defines a dynamics on a one- sided nonstationary subshift of finite type which is transverse to the usual shift dynamics, much as the horocycle flow is transverse to the geodesic flow: it acts on the stable manifolds of the shift space. The most classic example of adic transformation (the odometer) is, like the horocycle flow of a compact Riemann surface, both minimal and uniquely ergodic. This happens more generally whenever the matrix is primitive (some power is strictly positive), in the stationary case. Things get more interesting in the nonstationary situation (a sequence of matrices) where, just as for interval exchanges, one can find examples which are minimal but not uniquely ergodic. But the really fascinating things happen in the nonstationary, nonprimitive case, where one can also find interesting infinite measures. In this talk we sketch a classification of such measures. (Precisely, we classify the invariant Borel measures for adic transformations of finite rank which are finite on the path space of some sub-Bratteli diagram). This extends and builds on work by Bezuglyi, Kwiatkowski, Medynets and Solomyak. An application is given to nested circle rotations, where our necessary and sufficient condition for the measure to be infinite is expressed in terms of continued fractions. (Joint work with Marina Talet).