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[Froyland, Gary](#) (5-WA)**Finite approximation of Sinai-Bowen-Ruelle measures for Anosov systems in two dimensions. (English summary)***Random Comput. Dynam.* **3** (1995), *no. 4*, 251–263.[58F11](#) ([28D05](#) [58F15](#))

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In the ergodic theory of an Anosov system $f: M \rightarrow M$ on a compact Riemannian manifold M an important role is played by the so-called Sinai-Bowen-Ruelle measure (SBR-measure). Namely, for almost every point x (in the sense of Riemannian measure m), the sequence $\{(f^*)^n \delta_x\}$ converges in the weak topology of measures to the SBR-measure μ_{SBR} [see R. Bowen, *Equilibrium states and the ergodic theory of Anosov diffeomorphisms*, Lecture Notes in Math., 470, Springer, Berlin, 1975; [MR0442989 \(56 #1364\)](#)]. This property makes the SBR-measure “physically” meaningful. It is also the f -invariant measure shown by computer experiments. The author presents and proves a method of approximating μ_{SBR} by eigenvectors of a sequence of matrices $P_{ij}^n = m(f^{-1}(\Omega_j^n) \cap \Omega_i^n) / m(\Omega_i^n)$, where Ω_s^n are elements of a Markov partition for f^n . This method is an adaptation of methods used to approximate absolutely continuous invariant measures of piecewise expanding transformations [see S. M. Ulam, *Problems in modern mathematics*, Wiley, New York, 1964; [MR0280310 \(43 #6031\)](#); A. Boyarsky and Y.-S. Lou, *J. Approx. Theory* **65** (1991), no. 2, 231–244; [MR1104162 \(92g:58068\)](#)].

Reviewed by [Paweł Góra](#)

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