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Random iteration with place dependent probabilities

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Markov chains arising from random iteration of functions $S_{\theta}:X\to X$, $\theta \in \Theta$, where X is a Polish space and Θ is arbitrary set of indices are considerd. At $x\in X$, θ is sampled from distribution θ_x on Θ and θ_x are different for different x. Exponential convergence to a unique invariant measure is proved. This result is applied to case of random affine transformations on ${\mathbb R}^d$ giving existence of exponentially attractive perpetuities with place dependent probabilities.

Comments:	Revised version, Lemma 2.1 reformulated
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