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Projective convergence of random substitutions towards a Gibbs measures

This work is devoted to the study of processes generated by random substitutions over a finite alphabet. We prove, under mild conditions on the substitution's rule, the existence a unique process, which remains invariant under the substitution. Under stronger assumptions we prove that the invariant process is precisely a Gibbs measure. To this end we use the fact that under those conditions, a random substitution is contraction in the projective distance, and a result ensuring that a sequence of Markovian measures with sufficiently fast convergence rate, have a Gibbsian limit. By using some examples, we explore the tightness of our conditions.