

Effective Randomness of Unions and Intersections

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Abstract

We investigate the μ -randomness of unions and intersections of random sets under various notions of randomness corresponding to different probability measures. For example, the union of two relatively Martin-Löfrandom sets is not Martin-Löfrandom but is random with respect to the Bernoulli measure $\lambda_{\frac{3}{4}}$ under which any number belongs to the set with probability $\frac{3}{4}$. Conversely, any $\lambda_{\frac{3}{4}}$ random set is the union of two Martin-Löfrandom sets. Unions and intersections of random closed sets are also studied.