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mixing

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Defines	strongly mixing
Defines	strong mixing
Defines	strong-mixing
Defines	weak-mixing
Defines	weakly mixing
Defines	weak mixing

Let  $f$  be a measure-preserving transformation of a probability space  $(X, \mathcal{A}, \mu)$ . We say that  $f$  is *mixing* (or strong-mixing) if for all  $A, B \in \mathcal{A}$ ,

$$\lim_{n \rightarrow \infty} \mu(f^{-n}(A) \cap B) = \mu(A)\mu(B),$$

and  $f$  is *weakly mixing* if

$$\lim_{n \rightarrow \infty} \frac{1}{n} \sum_{i=0}^{n-1} |\mu(f^{-i}(A) \cap B) - \mu(A)\mu(B)| = 0$$

for all  $A, B \in \mathcal{A}$ .

Every mixing transformation is weakly mixing, and every weakly mixing transformation is ergodic.