Tail Sigma Algebra

1 Why

2 Definition

The **tail sigma algebra** of a sequence of random variables is the sigma algebra which is the intersection of the sigma algebras of all final parts of the sequence. A **tail event** is an element of the tail sigma-algebra.

The tail sigma algebra coincides with the sigma algebra generated by the union of the sigma algebras of each of of the random variables.

2.1 Notation

Let $\{f_n\}_n$ be a sequence of random variables. Denote the tail sigma algebra by $T(\{f_n\}_n)$. We defined it as:

$$T(\{f_n\}_n) = \bigcap_{n=1}^{\infty} \sigma(\{X_{n+k}\}_k).$$

In other words, for all natural n, the event is in the sigma algebra of the final part of

3 Results

Proposition 1. *The tail sigma algebra of a sequence of random variables is the same equals the sigma algebra generated by the union of the sigma algebras of each of the random variables.*