

Let Σ be a random variable

with PDF $\Sigma: \mathbb{R} \rightarrow \mathbb{R}$
PMF $p_{\Sigma}: \mathbb{R} \rightarrow [0, \infty)$:

$$P(\Sigma \in [a, b]) = \int_a^b p_{\Sigma}(\epsilon) d\epsilon$$

$$\text{Stipulate: } \int_{-\infty}^{\infty} p_{\Sigma}(\epsilon) d\epsilon = 1 \quad (\text{proper prob})$$

$$\text{and } H(\epsilon) = \int_{-\infty}^{\infty} p_{\Sigma}(\epsilon) \ln p_{\Sigma}(\epsilon) d\epsilon < \infty \quad (\text{some entropy fn exists and is } < \infty)$$

That is, if we rewrite $H(\epsilon)$ as:

$$H(\epsilon) = \lim_{a \rightarrow -\infty} - \int_a^0 p_{\Sigma}(\epsilon) \ln p_{\Sigma}(\epsilon) d\epsilon - \lim_{b \rightarrow \infty} \int_0^b p_{\Sigma}(\epsilon) \ln p_{\Sigma}(\epsilon) d\epsilon < \infty$$

1. The first part of the paper is devoted to a

discussion of the

main results of the paper.

2. The second part of the paper is devoted to a

discussion of the

main results of the paper.

3. The third part of the paper is devoted to a

discussion of the