PROBABILITY
AND
MATHEMATICAL STATISTICS
Vol. 11, Fasc. 1 (1990), pp. 79–95

ENTROPIE DES PROCESSUS LINÉAIRES

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Abstract: Let $Y = (Y_n)_{n\in Z}$ be a real stationary process with the spectral representation

$$Y_n = \int_{-\pi}^{\pi} e^{in\lambda} dZ_Y$$

and $X = (X_n)_{n\in Z}$ be a process defined by

$$X_n = \int_{-\pi}^{\pi} e^{in\lambda} \varphi(\lambda) dZ_Y .$$

We prove that the entropy of X satisfies the relation

$$H(X) \geq \frac{1}{2\pi} \int_{-\pi}^{\pi} Log|\varphi(\lambda)| d\lambda + H(Y).$$

Some cases where equality holds are obtained. We also give some applications.

2000 AMS Mathematics Subject Classification: Primary: -; Secondary: -;

Key words and phrases: -