NOTATION, SYMBOLS

1. $(\Omega, \underset{\sim}{F}, \mu)$ a measure space (most of the time isomorphic to the unit interval) $\Omega = \{\omega\}$

2. A,B,C,D,E,F,M,N, measurable sets

3. $\underset{\sim}{P}$, $\underset{\sim}{Q}$, $\underset{\sim}{R}$, $\underset{\sim}{S}$ partitions of $\Omega$ into finite or countable measurable sets

4. $\underset{\sim}{G}$, $\underset{\sim}{G}_1$ ... sub-$\sigma$-fields of $\underset{\sim}{F}$.

5. $\mu\ (A/\underset{\sim}{G})(\omega)$ the conditional probability of A given $\underset{\sim}{G}$

6. $E(f/\underset{\sim}{G})(\omega)$ the conditional expectation of $f(\omega)$ given $\underset{\sim}{G}$

7. $h(\underset{\sim}{P}) = -\sum_k \mu(\underset{\sim}{P}^i) \log \mu(P^i)$ , where $\underset{\sim}{P} = (P^1 \ldots P^k \ldots)$

8. $\underset{\sim}{P}/A = (P^1 \cap A, \ldots P^k \cap A \ldots)$

9. $h(\underset{\sim}{P}/A) = \sum_k \mu(P^k/A) \log \mu(P^k/A)$

10. $h(\underset{\sim}{P}/\underset{\sim}{Q}) = \sum_j \mu(Q^j)\ h(\underset{\sim}{P}/Q^j)$

11. $I(\underset{\sim}{P})(\omega) = -\log \mu(P^k),\ \omega \in P^k$

12. $I(\underset{\sim}{P}/\underset{\sim}{Q})(\omega) = -\log \mu(P^k/Q^j),\ \omega \in P^k \cap Q^j$.

13. T, $\hat{T}$, R ... transformations

14. $(\underset{\sim}{P})_m^n = \bigvee_{i=m}^{n} T^i\underset{\sim}{P}$.

15. $\underset{\sim}{F}(\underset{\sim}{P}) = (\underset{\sim}{P})_{-\infty}^{\infty}$ if T is invertible, or $(\underset{\sim}{P})_{-\infty}^{0}$ in the non-invertible case

16. $\mathrm{Tail}(\underset{\sim}{P}) = \bigcap_{n=0}^{\infty} (\underset{\sim}{P})_{-\infty}^{-n}$

17. $\underset{\sim}{P} \perp \underset{\sim}{Q}$ , $\underset{\sim}{P}$ is independent of $\underset{\sim}{Q}$

18. $\underset{\sim}{P} \overset{\varepsilon}{\perp} \underset{\sim}{Q}$ , $\underset{\sim}{P}$ is $\varepsilon$- independent of $\underset{\sim}{Q}$.

19. A transformation T is automorphism if it is measure presering and invertible.

20. A set A is trivial if $\mu(A) = 0$ or $\mu(A^c) = 0$
$\underset{\sim}{P}$ or $\underset{\sim}{G}$ are trivial if all their sets are trivial.