

Chapter 1

Big O_p and little o_p

(느낌) $\circ \supset \subset$

(정의) $\{X_n\}$: array of random variable, $\{a_n\}$: array of real number.

$$\begin{aligned} X_n &= O_p(a_n), \quad \text{as } n \rightarrow \infty \\ \iff X_n/a_n &= O_p(1), \quad \text{as } n \rightarrow \infty \\ \iff \sup_n P\{|X_n/a_n| > k\} &\xrightarrow{k \rightarrow \infty} 0 \end{aligned}$$

Bibliography

- [1] Vogt, M., & Dette, H. (2015). Detecting gradual changes in locally stationary processes. *The Annals of Statistics*, 43(2), 713-740.