Review

Ch.2 System response method

* System response identification
* Find or estimate of

1. How to design of

Method 1.

1.1) Input pulse

1.2)The output is

1.3)The estimator :

1.4)The input is not realizable **Evev if the matlab simulation is OK**, See Fig(2.2)

Method 2.

* 1. step Input
  2. The output is

1.3)The estimator :

1.4)If the output is corrupted by noise, the difference of noise is very large so that the estimator is not good as pulse response Even if the matlab simulation may be shown that the estimator is the same to the pulse input(try the output is corrupted by noise) Correlation Method

Method 3 . Correlation Functions (Ch.4)

1. Input is not defined

1.1 Time average of Autocorrelation Function

-time average in time -invariant system



Discrete-time case



* Properties of auto correlations



1. If u(t) is periodic, then is periodic

1.2. Cross-correlation Function

As time average

In discrete case



%%%% remote distance measurement - application of correlation function

1. Send a signal
2. Received the reflected signal r(t) = s(t-delay)
3. Cross correlation :

The peak time “l “ = delay