|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | |  | Ex.5.3 | Ex.5.8 | Ex.5.11 |
| Measurement  Data | |  | Textbook | As Ex.5.3 | As Ex.5.3 |
| Regressor | |  | 🡨 | Different from Ex.5.3 | As Ex.5.3 |
| Estimator | |  | LSE | LSE | As Ex.5.3 |
| Prediction Error  (residual) | |  |  |  | As Ex.5.3 |
|  | Mean |  | Unbiased /Using sample mean  (Assumption:E(e) = 0) | Biased / | As Ex.5.3 |
|  |
| Variance |  | Using sample variance | Greater than Ex.5.3 | As Ex.5.3 |
| Accuracy |  |  |  | \*\* |
| \*\* Standard deviation :  Statistics: )  Compared with the estimator values, only the velocity is accurately estimated. | | | | | |

\*\* Ex. 5.12 : Two unbiased estimators but different variance. 🡪 if we know the mean and variance of the noise, we have to use it

to get better estimator.

-simple averaged estimator: ¼ (y(1) + y(2) + y(3) + y(4)

-weighted LSE: