

# Notes to Grewal:2008

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## Full reference

Mohinder S. Grewal and Angus P. Andrews, Wiley, Hoboken, New Jersey, Kalman Filtering, Third edition, 2008,

## Notes

- p 293 (7.1),(7.3) is actually a continuous-discrete (CD) estimation problem but non-linear. I could not find the CD problem mentioned among the linear problems in chapter 4 which is strange.
- p 294 “Optimality of the Kalman Gain The computation and application of the Kalman gain-given the means and covariances of the state and measurement-remain exact whether the other parts of the problem are linear or not.” I can not find an interpretation of this that gives a correct statement. Using the Kalman gain based on correct appropriate covariances for a non linear system will give the best linear estimate but not the best estimate.
- p 294 (7.4) “ $\bar{K} = P_{xz}/(P_{zz} + R)$ ”  $\rightarrow \bar{K} = P_{xz}(P_{zz} + R)^{-1}$ .
- p 344 7.3.4 I do not understand the text in this section but I agree on the end result (7.181).
- p 350 “All nonlinear estimators are not perfectly reliable on all nonlinear problems” evidently true. Moreover, no nonlinear estimator is perfectly reliable on all nonlinear problems.