

ERRATA AND COMMENTS

Page 34: Below the equation (3.20) in the second line. $S_{COD,in}(t)$ should not be regarded as a non-measurable process disturbance, since it is measured in twenty-four hour intervals in Chapter 4.

Page 41: The reaction rate terms in the matrix $A_{aerob}(t)$ and $n_2(t)$ should be $\hat{r}_{SCOD,1}(t)$ instead of $\bar{r}_{SCOD,1}(t)$ and $r_{SCOD,1}(t)$, where $\hat{r}_{SCOD,1}(t) = \bar{r}_{SCOD,1}(t)/(1 - u_2)$. Furthermore, the reaction rate terms $\bar{r}_{SCOD,3}(t)$ and $\bar{r}_{SNH}(t)$ in the matrix $n_2(t)$ should instead be $\hat{r}_{SCOD,3}(t)$ and $\hat{r}_{SNH}(t)$ respectively, where $\hat{r}_{SCOD,3}(t) = \bar{r}_{SCOD,3}(t)/u_2$ and $\hat{r}_{SNH}(t) = \bar{r}_{SNH}(t)/u_2$.

Page 41: The matrix $B_u = [S_{S,C}/V \ 0 \dots 0]^T$ is wrong and should instead be $B_u = [0 \ S_{S,C}/V \ 0 \dots 0]^T$

Page 45: The vector $m(t)$ in Equation (4.1) is not defined and should be defined as: $m(t) = D(t)[S_{NO,in}(t) \ X_{TSS,in}(t) \ S_{COD,in}(t)]$.

Page 50: The vector $m_{in}(t)$ in Figure 4.1 is not defined and should be defined as: $m_{in}(t) = D(t)[S_{NO,in}(t) \ S_{COD,in}(t)]$. A connection from $S_{COD,in}(t)$ and $D(t)$ to $m_{in}(t)$ should also be included in the same figure.

Page 65: In Assumption A5.4 it should be a symmetric matrix-valued function $S(x)$, where $(\frac{\partial V}{\partial x}) = x^T S(x)$ and $\frac{\partial}{\partial x}[S^T(x)x]$ is symmetric.

Page 72: In the Equation (5.29) there is one left paranthesis too much.

Page 74: Below the Equation (5.33) in the second line it should be k instead of l .

Page 78: In the footnote the control law should be $u = [2x/(2+x)^2]\{\sqrt{[1 + \frac{1}{2}(2+x)^2]} - 1\}$ instead of $u = -[2x/(2+x)^2]\{\sqrt{[1 + \frac{1}{2}(2+x)^2]} - 1\}$.

Page 79: The three last terms S_2 , S_3 and S_4 in Table 5.1 are incorrect calculated. Thus, the errors for the three last terms should also be zero.

Page 84: In the Equation (5.51) the control law should be $u = -sat[-x_2 r^{-1}(2x_1 + 2x_2)]$ instead of $u = -sat[-x_2 r^{-1}(-2x_1 + 2x_2)]$.

Page 89: The control signal u_2 in Figure 5.4 should be $u_2 = S_O$ instead of $u_2 = \frac{S_O}{K+S_O}$.

Page 104: The reaction rate terms $\bar{r}_{SCOD,1}(t)$, $\bar{r}_{SCOD,3}(t)$ and $\bar{r}_{SNH}(t)$ in Table D.4 should instead be $\hat{r}_{SCOD,1}(t)$, $\hat{r}_{SCOD,3}(t)$ and $\hat{r}_{SNH}(t)$, respectively. Furthermore, the last parameter in Table D.5 should be α_4 instead of α_1 .

The list will be updated as soon as any further errors have been found.

The author apologizes for any inconveniences these errors may have caused.

Mats Ekman

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