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ERRATUM

Erratum to: Generalized Linear Covariance Analysis

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Equation (69) should read

$$\mathsf{r} = \tilde{\mathsf{H}}\mathsf{e}_*^- + \mathsf{u}_d + \mathsf{v} \tag{69}$$

The comment between equations (77) and (78) should read

"with $P_*^- = P(t_*^-)$,"

Equation (82) should read

$$= \begin{cases} \mathsf{Q}_d(t_i, t_*)\Phi^{\mathsf{T}}(t_j, t_i) & t_* < t_i \le t_j, \\ \Phi(t_i, t_j)\mathsf{Q}_d(t_j, t_*) & t_* < t_j \le t_i, \\ \Phi(t_i, t_*)\mathsf{Q}_d(t_*, t_j)\Phi^{\mathsf{T}}(t_j, t_*) & t_i \le t_j < t_*, \\ \Phi(t_i, t_*)\mathsf{Q}_d(t_*, t_i)\Phi^{\mathsf{T}}(t_j, t_*) & t_j \le t_i < t_*, \\ \mathsf{0} & \text{otherwise.} \end{cases} \tag{82}$$

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Equations (86)–(88) should read

$$\mathsf{N}_d(t) = \mathrm{E}\left[\mathsf{e}^+_{w*}\mathsf{w}^{\mathrm{T}}_d(t,t_*)\right] \tag{86}$$

$$= -\mathrm{E}\left[\tilde{\mathsf{S}}_*\sum_i \mathsf{K}_i\mathsf{u}_{di}\mathsf{w}^{\mathrm{T}}_d(t,t_*)\right] \tag{87}$$

$$= -\tilde{\mathsf{S}}_*\sum_i \mathsf{K}_i\mathsf{H}_i\mathsf{Q}_d(t_*;t,t_i) \tag{88}$$

The line immediately above equation (94) should read

"at epoch. In equation (75) the matrix $\left(\mathsf{I}_n - \tilde{\mathsf{S}}_*\sum_i \mathsf{K}_i\tilde{\mathsf{H}}_i\right)$ is replaced by"

The assumption made below equation (74) that the errors in e^+_{a*}, e^+_{v*}, and e^+_{w*} are uncorrelated is certainly valid if t_* is prior to all the measurements, so the results of the paper are equally valid in that case. If t_* is later than some or all of the measurements, however, it might be more reasonable to assume that e^+_{a*} includes the process noise accumulated between the beginning of the observation span and t_*, in which case it has nontrivial correlations with e^+_{w*}. This modifies the manner in which process noise appears in the covariance analysis of the batch estimator [1].

References

1. Markley, F.L., Carpenter, J.R.: Linear covariance analysis and epoch state estimators. J. Astronaut. Sci. (this issue)