



Erratum

New Solutions for the Perturbed Lambert Problem Using Regularization and Picard Iteration

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In Eq. (10), on page 1551, the fourth element in the first row of the matrix should be u_4 and not $-u_4$. The corrected equation is shown as follows:

$$\mathbf{r} = \begin{Bmatrix} X \\ Y \\ Z \\ 0 \end{Bmatrix} = L(\mathbf{u})\mathbf{u}, \text{ where } L(\mathbf{u}) = \begin{bmatrix} u_1 & -u_2 & -u_3 & u_4 \\ u_2 & u_1 & -u_4 & -u_3 \\ u_3 & u_4 & u_1 & u_2 \\ u_4 & -u_3 & u_2 & -u_1 \end{bmatrix},$$

$$\mathbf{u} = \begin{Bmatrix} u_1 \\ u_2 \\ u_3 \\ u_4 \end{Bmatrix} \quad (1)$$

In Fig. 3, on page 1553, the figure shows that the $\hat{\mathbf{o}}_1$ direction of the special coordinate frame is aligned with the \mathbf{r}_f direction. As stated in the preceding paragraphs, the special coordinate system could be chosen such that the $\hat{\mathbf{o}}_1$ axis aligned with either the \mathbf{r}_0 or the \mathbf{r}_f directions. The computations carried out for this paper aligned it with \mathbf{r}_f .

On page 1556, paragraph two, the following sentence should be added to provide more clarity to the reader: Observe in Figs. 6 and 8 that the $\max|\lambda|$ for the TPBVP is 0.405, whereas the $\max|\lambda|$ for the IVP is 0.003. Thus, we expect the Picard convergence domain to be much larger for the IVP than the TPBVP.

On page 1556, paragraph three, the first sentence should read as follows: The necessary condition for convergence of the TPBVP is given by

$$cw_2^2 \lambda_{\max}(C_x C_\alpha^B) \leq 1 \quad (2)$$

In Eq. (46), on page 1558, \mathbf{r} and α should be replaced with \mathbf{r}_0 and α_0 , as shown in the following corrected equation:

$$\mathbf{u}'_{\text{TPBVP}}(0) = \frac{\mathbf{r}_0}{2\sqrt{\mu\alpha_0}} L(\mathbf{u}(0))\dot{\mathbf{r}}(0) \quad (3)$$

In Fig. 11, on page 1558, the equation above the box should reflect the same changes as in Eq. (46). That is, \mathbf{r} and α should be replaced with \mathbf{r}_0 and α_0 .

On page 1559, paragraph one, the third sentence should read as follows: The MCPI-KS-TPBVP is run with this new final boundary condition and converges in about three to four iterations.

On page 1559, paragraph 2, the first sentence should read as follows: The perturbed Lambert's problem is solved for a rotating Earth with gravity perturbations, using the Earth gravitational model 2008 spherical harmonic gravity model.

Supplementary materials, including our MATLAB and C/C++ computer codes, as well as the driver routines used to compute the results in this paper, can be downloaded*.

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*Data available online at lasr.tamu.edu [retrieved 2016].