Legged Self-Manipulation Errata

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September 20, 2018

This document contains errata collected for the paper:
Aaron M. Johnson and D. E. Koditschek. "Legged Self-Manipulation". *IEEE Access*, 1: 310–334. May 2013.

- Page 310, Before the Abstract, the citation to prior publication of section IV-A should read [13].
- Page 315, Eqn. (14), the $\mathbf{A}^T_{g_{c_1 o}}$ terms should be adjoint matrices, $\mathbf{Ad}^T_{g_{c_1 o}}$.
- Page 316, Eqn. (17), the subscript on $\mathbf{R}$ should read wp, i.e. $\mathbf{R}^T_{wp}$, as in the line above.
- Page 317, Eqn. (29) should be the line just after Eqn. (28).
- Page 328, Eqn. (68), the length terms in the denominator of the first line should be squared, as in Eqn. (67):

$$\varepsilon_n := \frac{\dot{\phi}}{\dot{\theta}_1} = -\frac{2I_l + m_{r2}(\frac{\rho_1}{2})^2}{I_b + 2I_l + 2m_l\ell_1^2 + m_{r2}\frac{\rho_1^2}{2}} \tag{1}$$

- Page 328, Result C.5, the font for ε_n should match Eqn. (68).
- Page 330, Appendix D, first column, the sixth line of equations in this section should not include the symbol $\times$ (this should be interpreted as the usual matrix multiplication with the previous line):

$$T = \frac{1}{2}(\mathbf{V}^b_{wp})^T\mathbf{M}_b\mathbf{V}^b_{wp} + \sum_{i=1}^{\mathrm{n}}\frac{1}{2}(\mathbf{Ad}_{g^{-1}_{pl_i}}\mathbf{V}^b_{wp} + \mathbf{V}^b_{pl_i})^T\mathbf{M}_{l_i}(\mathbf{Ad}_{g^{-1}_{pl_i}}\mathbf{V}^b_{wp} + \mathbf{V}^b_{pl_i})$$

- Page 331, Appendix E, first column, the fourth line of equations on this page should not include the symbol $\times$ (this should be interpreted as the usual matrix multiplication with the previous line):

$$\begin{aligned}\lambda &= \mathbf{A}^*(\Upsilon - \overline{\mathbf{M}}\ddot{\mathbf{q}} - \overline{\mathbf{C}}\dot{\mathbf{q}} - \overline{\mathbf{N}}) \\ &= \mathbf{A}^*(\Upsilon - (\overline{\mathbf{M}}\mathbf{H})\ddot{\mathbf{y}} - (\overline{\mathbf{M}}\dot{\mathbf{H}} + \overline{\mathbf{C}}\mathbf{H})\dot{\mathbf{y}} - \overline{\mathbf{N}}) \\ &= \mathbf{A}^*(\mathbf{Id}_q - \overline{\mathbf{M}}\mathbf{H}(\mathbf{H}^T\overline{\mathbf{M}}\mathbf{H})^{-1}\mathbf{H}^T)(\Upsilon - (\overline{\mathbf{M}}\dot{\mathbf{H}} + \overline{\mathbf{C}}\mathbf{H})\dot{\mathbf{y}} - \overline{\mathbf{N}}) \\ &= \mathbf{A}^*(\Upsilon - (\overline{\mathbf{M}}\dot{\mathbf{H}} + \overline{\mathbf{C}}\mathbf{H})\dot{\mathbf{y}} - \overline{\mathbf{N}}).\end{aligned}$$

- Page 332, second column, the reference to the mass matrix and Corilis matrix in Fig. 15 should have no equation numbers (81 and 82 are unrelated).