




CORRECTION

## Correction to: A geometric formulation of multirotor aerial vehicle dynamics

Youngsuk Hong  · Ramy Rashad · Soocheol Noh · Taeyoon Lee · Stefano Stramigioli · Frank C. Park

Published online: 14 March 2022  
© Springer Nature B.V. 2022

### Correction to:

**Nonlinear Dyn (2022) 107:495–513**  
<https://doi.org/10.1007/s11071-021-07042-6>

Due to proofing oversights, the article was published bearing typographical errors in some of its equations.

The errors and correct equations are as provided:

---

The original article can be found online at <https://doi.org/10.1007/s11071-021-07042-6>.

---

Y. Hong (✉) · S. Noh · T. Lee · F. C. Park  
Department of Mechanical and Aerospace Engineering,  
Seoul National University, Seoul, Korea  
e-mail: yshong@robotics.snu.ac.kr

S. Noh  
e-mail: kaironseu@naver.com

T. Lee  
e-mail: alex07143@snu.ac.kr

F. C. Park  
e-mail: fcp@snu.ac.kr

R. Rashad · S. Stramigioli  
Robotics and Mechatronics Group, University of Twente,  
Enschede, The Netherlands  
e-mail: r.a.m.rashadhashem@utwente.nl

S. Stramigioli  
e-mail: s.stramigioli@utwente.nl

**Errors Found (Original Copy)**

$$\mathcal{W}_c^{p,p} = -\mathcal{W}_c^{p,c} = -[\text{Ad}_{T_p^c}]^\top \mathcal{W}_c^{c,c}, \quad (24)$$

with  $\mathcal{W}_c^{c,c} \in (\mathbb{R}^6)^*$  denoting the reaction wrench that the parent body exerts on the child body (expressed in  $\{c\}$ ) which is given by

$$\mathcal{W}_c^{c,c} = \mathcal{G}_c^c \dot{\mathcal{V}}_c^{c,0} - [\text{ad}_{\mathcal{V}_c^{c,0}}]^\top \mathcal{G}_c^c \mathcal{V}_c^{c,0}, \quad (25)$$

$$\begin{bmatrix} \mathcal{W}_c^{p,p} \\ \mathcal{V}_c^{c,0} \\ \tau_c \end{bmatrix} = J_c^p(\theta_c) \begin{bmatrix} \mathcal{V}_p^{p,0} \\ \mathcal{W}_c^{p,p} \\ \theta_c \end{bmatrix}, \quad (32)$$

**Corrected**

$$\mathcal{W}_c^{p,p} = -\mathcal{W}_p^{p,c} = -[\text{Ad}_{T_p^c}]^\top \mathcal{W}_p^{c,c}, \quad (24)$$

with  $\mathcal{W}_p^{c,c} \in (\mathbb{R}^6)^*$  denoting the reaction wrench that the parent body exerts on the child body (expressed in  $\{c\}$ ) which is given by

$$\mathcal{W}_p^{c,c} = \mathcal{G}_c^c \dot{\mathcal{V}}_c^{c,0} - [\text{ad}_{\mathcal{V}_c^{c,0}}]^\top \mathcal{G}_c^c \mathcal{V}_c^{c,0}, \quad (25)$$

$$\begin{bmatrix} \mathcal{W}_c^{p,p} \\ \mathcal{V}_c^{c,0} \\ \tau_c \end{bmatrix} = J_c^p(\theta_c) \begin{bmatrix} \mathcal{V}_p^{p,0} \\ \mathcal{W}_p^{c,c} \\ \theta_c \end{bmatrix}, \quad (32)$$

Furthermore, an acknowledgement for this work should be noted as:

**Acknowledgements** Youngsuk Hong and Frank Chongwoo Park were supported in part by SRRC NRF grant 2016R1A5A1938472, MOTIE ATC+ Technology Innovation Program 20008547, SNU-IAMD, SNU BK21+ Program in Mechanical Engineering, and the SNU Institute for Engineering

Research. Ramy Rashad was partially supported by the PortWings project funded by the European Research Council [Grant Agreement No. 787675].

**Publisher's Note** Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.