



Errata: “Static Stability of Planar Contacting Systems: Analytical Treatment in Euclidean Space” [ASME J. Mech. Rob., 2024, 16(8), p. 081009; DOI: 10.1115/1.4064065]

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This document contains errata for the research paper titled “Static Stability of Planar Contacting Systems: Analytical Treatment in Euclidean Space” (DOI: 10.1115/1.4064065) by the same authors. The corrections are provided along with the reasonings. The authors request the journal editor to allow incorporation of the following corrections for the sake of the reader’s understanding and clarity.

- (i) Figure 8 on the page 081009-6 of the paper is to be substituted with Fig. 1 of this document. Figure 1 is the corrected figure where the senses of the arrows to mark θ_1 and ϕ_1 are reversed.
- (ii) In Table 1 on page 081009-6, $k_m > 0, k_f > 0$ is to be substituted with $k_m > 0, k_f < 0$ in the entries of the first row and the first column. It was a typo that was overlooked by the authors.
- (iii) Figure 11 on page 081009-8 is to be substituted with Fig. 2 of this document. The only correction is in Fig. 2(c); Figs. 2(a) and 2(b) are the same as Figs. 11(a) and 11(b) of the paper. Earlier, there was a mistake in considering the algebraic sign of ϕ_1 . As a result, we obtained a different straight line as the boundary of the stability region for case (c).
- (iv) Table 2 on the page 081009-8 includes “Biped on inclined plane,” which is not discussed in the paper. Also, the discussion on gripper is missing in the same table. The same table is to be substituted with the corrected table, i.e., Table 1 of this document.
- (v) As the equation of the straight line depicting the stability region is modified, the stability region for case (c) for biped on a curved surface in Table 3 on page 081009-9 is to be corrected as $(-\infty, 0.293x + 0.421)$. Earlier, it was $(-\infty, -0.262x + 0.402)$ (row number 6).
- (vi) The value of h_1 , as mentioned in Sec. 6.2 on page 081009-9 as 3 m, is to be corrected to 3.18 m.

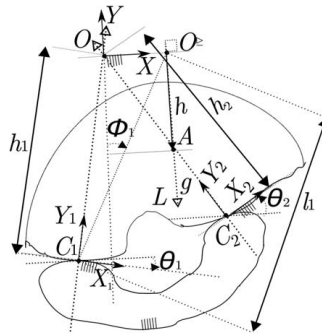


Fig. 1 A double contact system

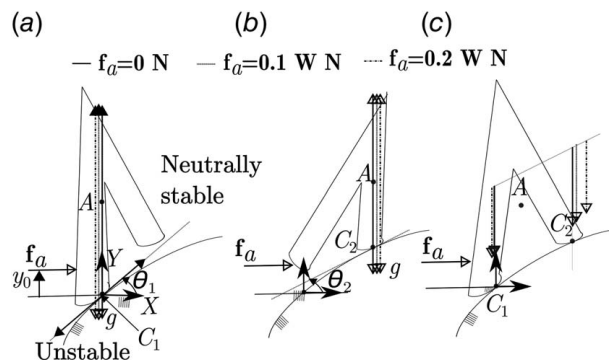


Fig. 2 Stability region: a biped on a curved surface

Table 1 Equilibrium region for double support (case (c))

Example	Parameters	Force (N)	Eq. region (x)
Biped on stair	$d_x = 1 \text{ m}, d_y = 1 \text{ m}$	0	(0, 1)
	$y_0 = 0.1 \text{ m}$	0.1 W	(0.02, 1.06)
	$\mu_1 = \mu_2 = 0.4$	0.2 W	(-0.02, 1.15)
Biped on curved surface	$d_x = 1 \text{ m}, d_y = 0.6 \text{ m}$	0	(0, 1)
	$y_0 = 0.1 \text{ m}$	0.1 W	(0, 1.03)
	$\mu_1 = \mu_2 = 0.6$	0.2 W	(-0.01, 1.09)
Gripper	$d_x = 1 \text{ m}, d_y = 0 \text{ m}$	0	($-\infty, \infty$)
	$y_0 = -0.1 \text{ m}$	0.1 W	($-\infty, \infty$)
	$\mu_1 = \mu_2 = 0.6$	0.2 W	($-\infty, \infty$)