Corrigenda to the paper "Orders, Gauge, and Distance in Faceless Linear Cones; with Examples Relevant to Continuum Mechanics and Relativity"

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p. 361 It is true, for the reason given on pp. 360–361, that every open-order-isomorphism [-antimorphism] is also a closed-order-isomorphism [-antimorphism]. The assertion that every open-isotone [-antitone] mapping is also closed-isotone [-antitone] is, however, false. It is easy to construct counterexamples.

The assertion was used only in the proofs of Propositions 7.2 and 7.3. These propositions remain true, but the implications (ii) $\Rightarrow$ (iii) and (iv) $\Rightarrow$ (v) now require proof.

Proof of Proposition 7.2 (correction). (ii) *implies* (iii) *and* (iv) *implies* (v). Let $v \in C$ and $\alpha \in 1+\mathbb{P}^\times$ be given. If (iv) holds, ϕ is distance-preserving; thus $\delta'(\phi(v), \phi(\alpha v)) = \delta(v, \alpha v) = \log \alpha$, hence $\kappa'(\phi(\alpha v), \phi(v)) \leqq \alpha$; by (4.8), we have

$$\phi(\alpha v) \lhd' \alpha \phi(v) \quad \text{for all } v \in C \quad \text{and} \quad \alpha \in 1+\mathbb{P}^\times. \tag{1}$$

If (ii) holds, ϕ is homogeneous, and (1) is valid in this case because $\lhd'$ is reflexive.

Let $u, v \in C$ be given, such that $u \lhd v$. Let $\alpha \in 1+\mathbb{P}^\times$ be given. Then $u \prec \alpha v$. Since ϕ is open-isotone in either case, we have $\phi(u) \prec' \phi(\alpha v)$. By (1) and (2.12), $\phi(u) \prec' \alpha \phi(v)$, i.e., $\kappa'(\phi(u), \phi(v)) < \alpha$. Since $\alpha \in 1+\mathbb{P}^\times$ was arbitrary, we have $\kappa'(\phi(u), \phi(v)) \leqq 1$. By (4.6), this means that $\phi(u) \lhd' \phi(v)$. Hence ϕ is closed-isotone. ∎

p. 357 In (5.13), replace the last u by v.

p. 368 In (10.9), insert a comma after the first w.

p. 369 In the fourteenth line from the bottom, replace $\{0\}$ by $\{1\}$.

p. 372 In the sixth line, insert brace to read $\{0\}$. In Theorem 7, read $\dim W \geqq 3$ instead of $\dim W = 3$.

p. 373 In (11.5), the right-hand side should be divided by $h \circ \sigma$.

p. 376 In the third line, insert brace to read $\{1, 2, 3\}$.

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