ERRATUM TO: STABILITY OF CONCORDANCE EMBEDDINGS

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Samuel Muñoz-Echániz has made us aware of the following small oversight in [GKK23]:

Lemma 3.3 establishes a bound on how cartesian a certain $(3+r)$-cube $\overline{\mathrm{CE}}^{A_\blacksquare}(*, M_\bullet)$ is. In the proof, it says that there are maps of $(3+r)$-cubes

$$\mathrm{CE}^{A_\blacksquare}(*, M_\bullet) \to \mathrm{E}(A_\blacksquare, M_\bullet \times I) \quad \text{and} \quad \mathrm{CI}^{A_\blacksquare}(*, M_\bullet) \to \mathrm{I}(A_\blacksquare, M_\bullet \times I)$$

"by restriction". However, by definition, elements $I \to M \times I$ in the targets of these maps have to send the point $1 \in A_\blacksquare \subset I$ to $* \times \{1\} \subset M_\bullet \times I$ whereas elements $A_\blacksquare \to M_\bullet \times I$ in the sources are only required to send 1 to $M \times \{1\} \subset M_\bullet \times I$, so there is no "map by restriction".

The issue can be circumvented by considering the subspaces $\mathrm{CE}^{A_\blacksquare}(*, M_\bullet)' \subset \mathrm{CE}^{A_\blacksquare}(*, M_\bullet)$ and $\mathrm{CI}^{A_\blacksquare}(*, M_\bullet)' \subset \mathrm{CI}^{A_\blacksquare}(*, M_\bullet)$ where 1 is required to be sent to $* \times \{1\}$. The square of $(3+r)$-cubes

$$\begin{array}{ccc} \mathrm{CE}^{A_\blacksquare}(*, M_\bullet)' & \xrightarrow{\subset} & \mathrm{CE}^{A_\blacksquare}(*, M_\bullet) \\ \downarrow{\scriptstyle \subset} & & \downarrow{\scriptstyle \subset} \\ \mathrm{CI}^{A_\blacksquare}(*, M_\bullet)' & \xrightarrow{\subset} & \mathrm{CI}^{A_\blacksquare}(*, M_\bullet) \end{array}$$

is levelwise cartesian, so the cube of homotopy fibres $\overline{\mathrm{CE}}^{A_\blacksquare}(*, M_\bullet)$ of the right vertical map over the inclusion is equivalent to the cube of homotopy fibres $\overline{\mathrm{CE}}^{A_\blacksquare}(*, M_\bullet)'$ of the left vertical map over the inclusion. The current proof of Lemma 3.3 goes through for $\overline{\mathrm{CE}}^{A_\blacksquare}(*, M_\bullet)'$, so the resulting bound on how cartesian the cube $\overline{\mathrm{CE}}^{A_\blacksquare}(*, M_\bullet)'$ is holds equally well for $\overline{\mathrm{CE}}^{A_\blacksquare}(*, M_\bullet)$.

References

[GKK23] T. Goodwillie, M. Krannich, and A. Kupers, *Stability of concordance embeddings*, To appear in Proc. Roy. Soc. Edinburgh Sect. A (2023). 1

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