Typos

• page 20: “...with binary relations given by distance inequalities. However, when working directly...”

• page 25: “...with distances possibly outside of $S$, still satisfies these axioms.”

• page 26: “...there is an $R$-triangle $(r', s', t')$ in $S$, which $\Phi$-approximates $(u, v, w)$.”

• page 31: In the proof of Proposition 2.3.10(a), the element $s$ is undefined. The proof should read: “Suppose $\alpha, \beta \in S^*$, with $\alpha \leq^* \beta$. Fix an $S$-approximation $\Phi$ of $\{\alpha, \beta\}$. By density of $S$, we may fix $r \in \Phi(\alpha) \cap S$ and $s \in \Phi(\beta) \cap S$ such that $r \leq s$. Then $(r, s, s)$ is an $R$-triangle...”

• page 31: “However, in the case that $\mu := P_S(\alpha, \beta)$ is an element of $\nu(S)$,...”

• page 52: “Call an extension scheme $(A, f, \Psi)$ standard if $\Psi^+(A^f \times A^f) \subseteq R$.”

• page 52: “Set $f_0 = f|_{A_0}$, $A_0 = (A_0, d_A)$, and $\Psi_0 = \Psi_{A_0^f \times A_0^f}$.”

• page 52: $\Phi(a, b) = \begin{cases} \Phi_0(a, b) & \text{if } a, b \in A_0 \cup \{z_f\} \\ \hat{\Psi}(d_A(a, b)) & \text{otherwise.} \end{cases}$

• page 61: “...and, given $r, s \in R$, $r \oplus s$ is either $r + s$ or the maximal element of $R$.”

• page 63: (from the paragraph starting “In [15]...” through the rest of the section on page 64) In this discussion, there are some technical issues concerning whether equality of theories $T = T'$ should mean that $T$ and $T'$ are the same collection of sentences, or that they axiomatize the
same complete theory. The reader should assume the latter.

- page 64: “In [26], it is shown that the continuous theory of the complete Urysohn sphere has SOP\(_n\) for all \(n \geq 3\)...” (The cited source [26] does not address continuous versions of SOP\(_1\) or SOP\(_2\).)

- page 69: “For example, if \(S = (\{0, 1, 3, 4\}, +, S, \leq, 0)\), then \(\frac{1}{2}(1 + S 3) = 3\) and \(\frac{1}{2}1 + S \frac{1}{2}3 = 4\.”

- page 80: “For this, fix \(b \in BC\), and note \(U(a_2) \leq d(a_2, b) \oplus \delta_b\)...”

- page 80: “...by Lemma 3.4.10(c), we have \(a' \perp_C Bb_s\) for all \(a' \in A'\), which gives \(A' \perp_C Bb_s\) by Lemma 3.4.1.”

- page 81: “(iv) \(\mathcal{R}\) is ultrametric, i.e., for all \(r, s \in R\), if \(r \leq s\) then \(r \oplus s = s\.”

- page 88: “Since Th\((UR)\) is simple, it follows from Theorem 3.5.7(iv)...”

- page 96: “In other words arch\((\mathcal{R})\) \(\leq n\) if and only if \(s \leq nr\) for all \(s, r \in R^{>0}\.”

- page 98: “Given \(1 \leq i < n\), we have \(d(a_i^0, a_{i+1}^1) = \alpha_{i+1}\)...”

- page 105: “To show the first equality, it suffices by part (a)...”

- page 128: The proof of Theorem 4.4.4 is overly complicated, and contains several typos, listed below. For a cleaner proof, see the preprint Extending partial isometries of generalized metric spaces, arXiv 1509.04950.

- page 128: “Since Spec\((A)\) is finite, \(\mathcal{R}\) is countable and has only finitely many archimedean classes.”

- page 129: The indices \(i\) and \(j\) should not be fixed at the beginning of the proof of Claim 2. Instead, it should say: **Proof:** We extend \(A\) to an \(\mathcal{R}\)-metric space \(A^*\) such that, if \(A_1^*, \ldots, A_m^*\) are the \(\sim\)-classes of \(A^*\), then \(A_i^*\) and \(A_j^*\) are isometric for all \(i, j \leq m\.

- page 129: “Note that, for all \(1 \leq i \leq m\), \((A_i, d)\) is a subspace of \((A, d_0)\.”

- page 129: “Given \(1 \leq i, j \leq p\), fix an isometry \(\theta_{i,j} : A_i \rightarrow A_j\). By induction, there is an \(S_1\)-metric space \(B_1\) such that \(A_1 \subseteq B_1\) and any partial isometry of \(A_1\) extends to a total isometry of \(B_1\)”

- page 130: In the proof of Claim 4, \(a_i\) and \(a_j\) are fixed elements of \(\text{dom}(\varphi) \cap A_i\) and \(\text{dom}(\varphi) \cap A_j\), respectively.

- page 130: Both the definition of \(\hat{\varphi}\) and Claim 6 are irrelevant and can be entirely omitted.
• page 148: “(i) \( R = \{0,1,\ldots,n\} \cup \{t\} \), with \( t \not\in \{0,1,\ldots,n\} \)”

Errors

• page 117: There is a crucial error in the proof of Theorem 4.2.2, which prevents the argument from working in general when \( \mathcal{F} \) is nonempty. The argument can be salvaged by imposing strong restrictions on \( \mathcal{F} \), but the general situation is unclear. This has the following consequences:

(i) Theorem 4.2.2 is only proved when \( \mathcal{F} \) satisfies certain restrictions (which include \( \mathcal{F} = \emptyset \)).

(ii) Corollary 4.2.3 is only proved when \( \mathcal{F} \) satisfies these restrictions (in particular, Corollary 4.2.4 is still true).

(iii) Corollary 4.3.4 is still true (see final remarks below).

(iv) Other than these, all other results are unaffected.

A new draft of the argument, which spells out the restrictions on \( \mathcal{F} \), is available as part of the preprint: \textit{Extending partial isometries of generalized metric spaces}, \texttt{arxiv.org/abs/1509.04950}. In particular, the classes of triangles of odd perimeter (which are the subject of Corollary 4.3.4, and the motivation for considering nonempty \( \mathcal{F} \)) satisfy these restrictions.