CORRIGENDUM OF APPENDIX B OF "EMBEDDING TOPOLOGICAL DYNAMICAL SYSTEMS WITH PERIODIC POINTS IN CUBICAL SHIFT"

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In [Gut17, Theorem B.3] there is a mismatch between the statement of the theorem and its proof. In order to correct the situation it is enough to replace the expression "isomorphic extension" in the statement of Theorem B.3 and in its proof by the expression "strongly isomorphic extension". We proceed to give the necessary background.

We consider topological dynamical systems (t.d.s) (X, T) where X is compact and metric and $T : X \to X$ is a homeomorphism. Recall that a Borel subset of X is called a **full set** if it has measure 1 w.r.t any T-invariant Borel probability measure on X. Recall that an extension $\pi : (X, T) \to (Y, T)$ is called **strongly isomorphic** if there is a full set E of X such that the restriction of π to $\pi^{-1}E$ is one-to-one ([Bur19, §2.3]). This condition is easily seen to be equivalent to the condition that the Borel set $\{y \in Y : |\pi^{-1}(y)| = 1\}$ is full[1].

We remark that the equivalence between the small boundary property and the existence of a zero-dimensional strongly isomorphic extension is proven in [KS20, Theorem 5.5] using a different terminology. It is an open problem if the existence of a zero-dimensional isomorphic extension implies the existence of a zero-dimensional strongly isomorphic extension.

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References

[Bur19] David Burguet. Symbolic extensions and uniform generators for topological regular flows. *Journal of Differential Equations*, 267(7):4320–4372, 2019.

[Gut17] Yonatan Gutman. Embedding topological dynamical systems with periodic points in cubical shifts. *Ergodic Theory and Dynamical Systems*, 37(2):512–538, 2017.

[KS20] David Kerr and Gábor Szabó. Almost finiteness and the small boundary property. *Communications in Mathematical Physics*, 374(1):1–31, 2020.

[1] Note that the set $\{y \in Y : |\pi^{-1}(y)| = 1\} = \bigcap_n \{y \in Y : \mathrm{diam}(\pi^{-1}(y)) < \frac{1}{n}\}$ is G_δ.