ERRATUM TO: ENTROPY OF HOMEOMORPHISMS ON UNIMODAL INVERSE LIMIT SPACES

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If $Q(x) = ax(1-x)$ is a renormalisable quadratic map on the unit interval, say with non-trivial periodic interval J of period q, then the inverse limit space $\varprojlim([0,1], Q)$ contains subcontinua $G_i, 0 \le i < q$, that are homemorphic to $\varprojlim(J, Q^q)$ and are cyclically permuted by the shift-homeomorphism σ. In the proof of [1, Theorem 1.2], the step that a self-homeomorphism on $\varprojlim([0,1], Q)$ can act isotopically to different powers of σ on different G_i ([1, p. 999]) is not justified. The existence of arc-components that are dense in the core inverse limit space $\varprojlim([c_2, c_1], Q)$ prevents this. Therefore, the large set of entropies mentioned in [1, Theorem 1.2] cannot be realised. Only if $\varprojlim([c_2, c_1], Q)$ is decomposable and the renormalisation is within the first period doubling cascade (and hence of period $q = 2^n$), the above step holds, but this alone is too restrictive to lead to new values of the topological entropy. The correct statement is therefore the same as for the tent-family, i.e., it has the same form as [1, Theorem 1.1]:

Theorem 0.1. *Assume that Q is a quadratic map with positive topological entropy and $\log s = h_{top}(Q)$. If H is a homeomorphism on the inverse limit space $\varprojlim([0,1], Q)$, then the topological entropy $h_{top}(H) = |R| \log s$, where $R \in \mathbb{Z}$ is such that H is isotopic to σ^R.*

This theorem can be proved in an analogous way as [1, Theorem 1.1], using the new result [2, Theorem 5.1], which says that every self-homeomorphism on the inverse limit space of a quadratic map Q with positive topological entropy is isotopic to σ^R for some $R \in \mathbb{Z}$, is given.

References

[1] H. Bruin, S. Štimac, *Entropy of homeomorphisms on unimodal inverse limit spaces*, Nonlinearity **26** (2013), 991–1000.

[2] H. Bruin, S. Štimac, *On isotopy of self-homeomorphisms of quadratic inverse limit spaces*, Preprint 2017. Arxiv....

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