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08544. *Non-surjective satellite operators on the smooth concordance group.*

We provide an example of a satellite operator P with winding number 1 (i.e. a knot in $S^1 \times D^2$ representing a generator of first homology) such that for any knot $K \subset S^3$, the satellite knot $P(K)$ is not slice in any homology 4-ball. As a corollary, we obtain a new proof of a conjecture of Zeeman from the 1960s, originally proven by Akbulut, that a knot in the boundary of a contractible 4-manifold need not bound a piecewise-linear disk. The proof makes use of bordered Heegaard Floer homology and the concordance invariants τ and ϵ . (Received January 08, 2014)