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South St., Waltham, MA 02453. *Shake-concordance of knots.*

If  $K$  is a knot in  $S^3 = \partial B^4$ , then the 4-manifold  $W_K$  obtained by adding a single 2-handle to  $S^3$  along  $K$  with zero framing has  $H_2(W_K) \cong \mathbb{Z}$ . If a generator of  $H_2(W_K)$  can be represented by an embedded sphere,  $K$  is called *shake-slice*. Any slice knot is shake-slice, but the converse is unknown. We define a relative version of this concept, known as *shake-concordance*, and construct infinite families of knots that are pairwise shake-concordant but not concordant. We show that the concordance invariants  $\tau$ ,  $s$ , and slice genus are not invariants of shake-concordance. We also give a characterization of shake-concordant and shake-slice knots in terms of concordance. (Received July 28, 2014)