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415 South St, Waltham, MA 02453. *Shake slice and shake concordant knots.*

Consider the set of knots in the 3–sphere. There are a number of 4–dimensional equivalence relations on knots, which have interesting implications towards the study of 4–manifolds. The most well-studied of these is the relation called concordance, under which knots form an abelian group; knots concordant to the trivial knot are said to be slice. We study a generalization of concordance, called shake concordance; in this realm, the analogue for slice knots are called shake slice knots. Any slice knot is shake slice, but the converse is unknown. We construct infinite families of knots that are pairwise shake concordant but not concordant. We also give a complete characterization of shake concordant and shake slice knots in terms of concordance, which allows us to construct new infinite families of possible r–shake slice knots that are not slice. (Received September 10, 2015)