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Yelena Mandelshtam*, yelena13@stanford.edu, and **Alonso Espinosa-Dominguez, Hindy Drillick, Jennifer N. Jones-Baro, James Leng** and **Cesar E. Silva**. *Non-Rigid Rank-One Infinite Measures on the Circle*. Preliminary report.

Rank-one transformations have played an important role as a source of examples and counterexamples in ergodic theory. In 1976, del Junco showed that irrational rotations are rank-one, but did not give an explicit cutting and stacking construction. For a class of irrational numbers, depending on their Diophantine properties, we construct explicit rank-one transformations that are totally ergodic and not weakly mixing. We classify when the measure is finite or infinite. In the finite case they are isomorphic to irrational rotations, and we obtain explicit cutting and stacking constructions for these transformations. In addition, we extend this construction to obtain rank-one non-rigid infinite invariant measures on irrational rotations. One consequence is getting the first examples of infinite measure rank-one transformations that are totally ergodic and not weakly mixing. We also obtain nonsingular measures not admitting an invariant measure for irrational rotations. (Received September 25, 2018)