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Dave Auckly*, Math Department, Kansas State University, Manhattan, KS 66506, and **Daniel Ruberman**. *Exotic homotopy classes in diffeomorphism groups*.

The homotopy groups of the diffeomorphism/homeomorphism group of a four-dimensional manifold are in many ways analogous to the smooth/topological concordance group. Both reflect the large difference between embedded surfaces in the smooth and topological categories. This talk will present results demonstrating the large difference between these groups in the smooth and topological categories, describe how smoothly knotted surfaces lead to exotic homotopy classes of diffeomorphisms, and outline some parts of the computation of the relevant gauge-theoretic invariants that detect such exotic homotopy classes. (Received August 25, 2020)