Topological rigidity in Dehn twist homotopic classes

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Every orientation preserving 2-torus homeomorphism with no periodic orbit is either homotopic to the identity or (conjugate to a homeomorphism homotopic) to a Dehn twist. It is well known that the identity homotopy class is very flexible and contains a very rich variety of different dynamics among periodic point free homeomorphisms.

On the other hand, in this talk we will see that Dehn twist homotopy classes are topologically much more rigid and we shall prove that every non-wandering periodic point free homeomorphism in such a homotopy class is semi-conjugate to an irrational circle rotation.