1176-37-144 **Y M He*** (he@ou.edu), 601 Elm Ave, Norman, OK 73019. *Non-realizability of some big mapping class groups.*

For any surface S, there is a natural projection map $p : Homeo^+(S) \to MCG(S)$ from the group of orientation-preserving homeomorphisms of S to the mapping class group of S. The Nielsen realization problem studies if there is a map $s : MCG(S) \to Homeo^+(S)$ such that the composition $s \circ p$ is the identity map on $MCG(S)$.

In this talk, we will discuss the Nielsen realization problem for some big mapping class groups. In particular, we show that the mapping class group of the plane minus a Cantor set or the sphere minus a Cantor set has no realization as a subgroup of the homeomorphism group. (Received January 19, 2022)