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Funda Gultepe*, funda.gultepe@utoledo.edu, toledo, OH 42606. *Generating fully irreducible outer automorphisms of the free group.*

Fully irreducible outer automorphisms of the free group on n -letters are characterized by the property that no power of them fixes a conjugacy class of a free factor. These outer automorphisms exhibit many similarities to the pseudo Anosov surface homeomorphisms, as such we follow some methods from theory of mapping class group to determine ways to construct fully irreducible outer automorphisms. To this end, we refer to the *double handlebody* n -connected sum of $S^2 \times S^1$ which provides a simplicial complex on which the outer automorphism group of the free group acts. We thus use 3- dimensional topological methods to construct outer automorphisms via their action on such a simplicial complex. (Received September 15, 2018)