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**Bena Tshishiku\*** (bena@math.harvard.edu) and **Nick Salter**. *The lifting problem for braid groups.*

The mapping class group  $\text{Mod}(S)$  of a surface  $S$  is the group of diffeomorphisms of  $S$ , modulo isotopy. The Nielsen realization problem asks, “Can a given subgroup  $G < \text{Mod}(S)$  be lifted to the diffeomorphism group?” The answer is “yes” for finite  $G$  (by work of Kerckhoff) and “no” for  $G = \text{Mod}(S)$  (by work of Morita). For most infinite  $G < \text{Mod}(S)$ , we don’t know. I will discuss a special case of this problem, where  $G$  is the braid group. This is joint work with Nick Salter. (Received September 25, 2017)