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Title: Re-presenting and Representing the Pure Braid Groups.

Abstract: The pure braid groups have a classical presentation, going back to E. Artin, and classical representations, going back to Brauer and Gassner. These presentations are pleasant in that they arise from combing the pure braid, or from the iterated fibration of Fox-Fadell-Neuwirth, and they can thus be used to understand the groups as iterated semidirect products of free groups. Here we look at other presentations, which arise from work of Margalit and McCammond, as well as from group presentations for real arrangements arising in (separate) work of Salvetti and the author. We consider these presentations in the light of minimal CW structures on the complement of the pure braid arrangement, including explicit such CW structures given by Yoshinaga. Finally, we use these presentations to give representations (described by H. Schroeder) of Lawrence-Krammer-Bigelow type for the pure braid groups.