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Mark C Hughes* (hughes@mathematics.byu.edu) and **Seungwon Kim**. *Immersed Möbius bands in knot complements and representatives of \mathbb{Z}_2 -homology classes.*

We study the 3-dimensional immersed crosscap number of a knot, which is a nonorientable analogue of the immersed Seifert genus. We study knots with immersed crosscap number 1, and show that a knot has immersed crosscap number 1 if and only if it is a nontrivial $(2p, q)$ -torus or $(2p, q)$ -cable knot. We show that unlike in the orientable case the immersed crosscap number can differ from the embedded crosscap number by arbitrarily large amounts, and that it is neither bounded below nor above by the 4-dimensional crosscap number. We then use these constructions to find, for any $n \geq 2$, an oriented 3-manifold Y_n and class $\alpha_n \in H_2(Y_n; \mathbb{Z}_2)$ such that α_n can be represented by an immersed \mathbb{RP}^2 , but any embedded representative of α_n has a component S with $\chi(S) \leq 1 - n$. (Received September 24, 2018)