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Mark Hughes* (hughes@mathematics.byu.edu) and **Seungwon Kim**. *The immersed cross-cap number of a knot.*

The immersed Seifert genus of a knot K in S^3 can be defined as the minimal genus of an orientable immersed surface F with $\partial F = K$. By a result of Gabai, this value is always equal to the (embedded) Seifert genus of K . In this talk I will discuss the embedded and immersed cross-cap numbers of a knot, which are the non-orientable versions of these invariants. Unlike their orientable counterparts these values do not always coincide, and can in fact differ by an arbitrarily large amount. In further contrast to the orientable case, there are families of knots with arbitrarily high embedded 4-ball cross-cap numbers, but which are easily seen to have immersed cross-cap number 1. After describing these examples I will discuss a classification of knots with immersed cross-cap number 1. (Received September 26, 2017)