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Title: Relative genus bounds in indefinite 4-manifolds

Abstract: Given a closed 4-manifold X with an indefinite intersection form, we consider smoothly embedded surfaces in $X - \mathrm{int}(B^4)$, with boundary a given knot K in the 3-sphere.
We give several methods to bound the genus of such surfaces in a fixed homology class. Our techniques include adjunction inequalities from Heegaard Floer homology and the Bauer-Furuta invariants, and the $10/8$ theorem. In particular, we present obstructions to a knot being H-slice (that is, bounding a null-homologous disc) in a 4-manifold and show that the set of H-slice knots can detect exotic smooth structures on closed 4-manifolds.
This is joint work with Ciprian Manolescu and Lisa Piccirillo.