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Non-orientable surfaces in 4-manifolds

We study the minimal genus problem for embeddings of closed, non-orientable surfaces in a homology cobordism between rational homology spheres or in a closed, definite 4-manifold, using obstructions derived from Heegaard Floer homology. For instance, we show that if a non-orientable surface embeds essentially in the product of a lens space with an interval, its genus and normal Euler number are the same as those of a stabilization of a non-orientable surface embedded in the lens space itself. This is joint work with Danny Ruberman and Saso Strle.