Nonclassical minimizing oriented surfaces

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Consider a smooth closed simple curve Γ in a given Riemannian manifold. Following the classical work of Douglas and Rado it can be shown that, given any natural number g, there is an oriented surface which bounds Γ and has least area among all surfaces with genus at most g. Obviously as we increase g the area of the corresponding minimizer can only decrease. If the ambient manifold has dimension 3 and the curve is sufficiently regular (C^2 suffices), works of De Giorgi and Hardt and Simon guarantee that such number stabilizes, in other words the absolute (oriented) minimizer has finite topology. In a joint work with Guido De Philippis and Jonas Hirsch we show that the latter property might fail in higher codimension even if the curve is C^∞. Some results point instead to its validity for analytic curves (and analytic ambient metrics), confirming a conjecture of Brian White.