

Working with function spaces in various branches of mathematical analysis introduces optimality problems, where the question of choosing a function space both accessible and expressive becomes a nontrivial exercise. A good middle ground is provided by Orlicz spaces, parameterized by a single Young function and thus accessible, yet expansive. In this work, we study optimality problems on Sobolev embeddings in the so-called Maz'ya classes of Euclidean domains which are defined through their isoperimetric behavior. In particular, we prove the non-existence of optimal Orlicz spaces in certain Orlicz–Sobolev embeddings in a limiting (critical) state whose pivotal special case is the celebrated embedding of Brezis and Wainger for John domains.