Nonoccurence of the Lavrentiev gap
for multidimensional autonomous problems

PIERRE BOUSQUET

Abstract. Given a scalar autonomous problem in the multiple integrals calculus of variations, we establish the nonoccurence of the Lavrentiev gap between Sobolev and Lipschitz maps. The integrand is not assumed to be convex with respect to all variables. The proof relies on a new approximation result for a parametric version of the variational problem.