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Title. Non-locality in the Calculus of Variations

Abstract. We will motivate a general approach to non-locality through a couple of simple examples whose optimal solutions are not known. Though in general, it is very difficult to provide specific answers to problems, we will make an attempt to give answers for these two basic examples. We will briefly analyze existence and optimality in a certain non-local framework to begin with the understanding of these fundamental issues, at least in dimension one.