ON THE PROBLEM OF UNIQUENESS OF MINIMIZERS

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It is well-known that even under favorable conditions that ensure both existence and (partial) regularity of minimizers their uniqueness is not guaranteed. In this talk we show how exactly uniqueness is connected to convexity of the variational integral. We also give some results showing how uniqueness (and regularity) of minimizers can be ensured using smallness conditions on the data. It is important to emphasize that these smallness conditions are too weak to allow for a direct application of any known Implicit Function Theorem.