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Isoperimetric inequalities for compact domains in submanifolds of $N \times \mathbb{R}$.

The theory of minimal surfaces in product spaces $N \times \mathbb{R}$ has shown to be a rich theory in the recent years with a wealth of examples and results. In this spirit, we establish certain isoperimetric inequalities for compact subsets of minimal submanifolds of $N \times \mathbb{R}$, where N is a complete Riemannian n -manifold with sectional curvature $K_N \leq b \leq 0$ improving results of Markvorsen-Palmer. We also establish a comparison result for the mean time of the first exit of compact subsets of minimal submanifolds of $N \times \mathbb{R}$ extending a well known result due to Markvorsen. (Received January 29, 2008)