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Title: Lifting absolutely continuous curves from $P(\mathbf{T}^d)$ to $P_2(\mathbf{R}^d)$.

Abstract: Recall that the rotation vector of an absolutely continuous curve x : [0,) $\mathbf{T}^d$ when it exists, is the asymptotic limit of \hat{x}(t)/t, where \hat{x} is any lift of x to the universal cover $\mathbf{R}^d$: One of the main difference with an absolutely continuous curve :[0,) $P(\mathbf{T}^d)$, which
constitutes an analytical challenge, is the non uniqueness of a velocity field associated to . Given c $\mathbf{R}^d$, we identified a unique velocity $\mathbf{v_c}$ of satisfying a certain variational principle and derived existence of a lift of (,$\mathbf{v_c}$) to obtain an absolutely continuous curve \hat{}: [0,) $P(\mathbf{R}^d)$.
This has been central for extending the Mather/Mane theory to $P(\mathbf{T}^d)$ and make inferences about the asymptotic behavior of classes of partial differential equations.