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Título: Differential Forms On Wasserstein Space And Infinite-Dimensional Hamiltonian Sys

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Let $\{M\}$ denote the space of probability measures on $\{R\}D$ endowed with the Wasserstein metric. A differential calculus for a certain class of absolutely continuous curves in $\{M\}$ was introduced by Ambrosio, Gigli, and Savaré. In this paper the authors develop a calculus for the corresponding class of differential forms on $lM\}$. In particular they prove an analogue of Green's theorem for 1-forms and show that the corresponding first cohomology group, in the sense of de Rham, vanishes. For $D=2d$ the authors then define a symplectic distribution on $l\{M\}$ in terms of this calculus, thus obtaining a rigorous framework for the notion of Hamiltonian systems as introduced by Ambrosio and Gangbo. Throughout the paper the authors emphasize the geometric viewpoint and the role played by certain diffeomorphism groups of $\{R\}D$.