

Metric diffusion along compact foliations.

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Metric diffusion at time $t \geq 0$ along a foliation \mathcal{F} on a compact Riemannian manifold (M, g) is defined as the Wasserstein distance d_W of Dirac masses diffused along the leaves of foliation, that is

$$D_t d(x, y) = d_W(D_t \delta_x, D_t \delta_y),$$

where D_t denotes the foliated diffusion operator. In the talk we present the topology of the metric space $(M, D_t d)$ and study the convergence in Wasserstein-Hausdorff topology of $(M, D_t d)_{t \geq 0}$ while $t \rightarrow \infty$. We demonstrate the necessary condition for such convergence. In addition, for foliation of dimension one, the sufficient condition will be presented.