

# The Information Topology and True Laminations for Diffeomorphisms

Meiyu Su

Long Island University, Brooklyn Campus

Dennis Sullivan

The Graduate Center of CUNY & SUNY at Stonybrook

**Abstract.** We explore the lamination structure from data supplied by a general measure space  $X$  provided with a Borel probability measure  $m$ . We show that if the data satisfy some typical axioms then there exists a lamination  $\mathcal{L}$  injected in the underlying space  $X$  whose image fills up the measure  $m$ . For any  $C^{1+\alpha}$  diffeomorphism  $f$  of a compact Riemannian manifold  $M$ , we construct the data that naturally possess the properties of the axioms thus we obtain the stable and unstable laminations  $\mathcal{L}^{s/u}$  continuously injected in the stable and unstable partitions  $\mathcal{W}^{s/u}$ . These laminations are intersecting at almost every regular point for the measure.