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Clare G Wickman* (clare.wickman@jhuapl.edu). *Probabilistic Frames: Ideas from Optimal Transport*. Preliminary report.

Abstract: Probabilistic frames are subset of the Wasserstein space of probability measures with finite second moment, and they provide one generalization of finite frames. The Wasserstein space is a metric space of probability measures, endowed with a metric whose definition comes from Monge-Kantorovich optimal transport problem. By examining frames within the optimal transport framework, previously difficult analysis can be performed, such as comparing frames with different cardinalities. Within the context of the Wasserstein space, familiar concepts in frames such as analysis, synthesis, and duality can be reformulated. Analogies can be drawn to fusion frames, and frame geodesics can be constructed in the Wasserstein space. Other problems in frame theory can also be reposed in this space. (Received August 30, 2014)