1107-28-337 **Trubee Hodgman Davison*** (trubee.davison@colorado.edu). *Generalizing the Kantorovich Metric to Projection-Valued Measures: With Applications to Iterated Function Systems.*

Given a compact metric space X, the collection of Borel probability measures on X can be made into a compact metric space via the Kantorovich metric. We partially generalize this well known result to projection-valued measures. In particular, given a Hilbert space $\mathcal{H}$, we consider the collection of projection-valued measures from X into the projections on $\mathcal{H}$. We show that this collection can be made into a complete and bounded metric space via a generalized Kantorovich metric. We develop new properties and applications of this metric. Indeed, we provide an alternative method for proving a fixed point result due to P. Jorgensen. This fixed point, which is a projection-valued measure, arises from an iterated function system on X, and is related to Cuntz algebras. (Received January 18, 2015)