1171-05-39   **Benjamin Jany*** (`bja246@uky.edu`), 260 Lexington Ave, apt 101, Lexington, KY 40508.
Independent space of q-polymatroids.

q-Polymatroids, a generalization of q-matroids, were introduced and studied to understand algebraic and combinatorial invariants of rank metric codes, such as the rank distance, the generalized weights, or the rank weight enumerator. q-Polymatroids are defined via a submodular, non-decreasing function on the collection of subspaces of a finite dimensional vector space over a finite field. In this talk, I will define the notion of independent space of a q-polymatroid, and show that the submodular, non-decreasing function defined on the collection of independents spaces fully determine the q-polymatroid. Finally, I will discuss connections between rank metric codes and the independent spaces of q-polymatroids. (Received August 06, 2021)