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On a q-analogue of perfect matroid designs

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A Steiner system is characterized with the subsets (called blocks) satisfying that all t-subsets are included in exactly one block. A *perfect matroid design* (PMD) is a matroid whose flats of the same rank have the same size. Recently, E. Byrne et. al. proposed a q-analogue of PMDs (namely q-PMDs) and constructed a non-trivial q-PMD from a q-analogue of a Steiner system. In this talk, we show some properties of q-PMDs and demonstrate that a certain class of q-PMDs induces a q-Steiner system.

Primary author: KAWABUCHI, Shinya (Kumamoto University)

Co-author: Prof. SHIROMOTO, Keisuke (Kumamoto University)

Presenter: KAWABUCHI, Shinya (Kumamoto University)