Contribution ID: **33** Type: **Presentation (25 min)**

The cyclic flats of L-polymatroids

Tuesday, 20 August 2024 15:05 (25 minutes)

In recent years, q-polymatroids have drawn interest because of their connection with rank-metric codes. For a special class of q-polymatroids called q-matroids, the fundamental notion of a cyclic flat has been developed as a way to identify the key structural features of a q-matroid. In this talk, we will see a generalisation of the definition of a cyclic flat that can apply to q-polymatroids, as well as a further generalisation, L-polymatroids. The cyclic flats of an L-polymatroid is essentially a reduction of the data of an L-polymatroid such that the L-polymatroid can be retrieved from its cyclic flats. As such, in matroid theory, cyclic flats have been used to characterise numerous invariants.

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