Enriched toric $[\vec{D}]$-partitions

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In this talk I will discuss enriched toric $[\vec{D}]$-partitions. Whereas Stembridge's enriched P-partitions give rise to the peak algebra which is a subring of the ring of quasi-symmetric functions QSym, our enriched toric $[\vec{D}]$-partitions generate the cyclic peak algebra which is a subring of the ring of cyclic quasi-symmetric functions cQSym. In the same manner as the peak set of linear permutations appears when considering enriched P-partitions, the cyclic peak set of cyclic permutations plays an important role in our theory. This further reveals the cyclic shuffle-compatibility of cyclic peak sets.