

Full dimensional 0/1-Polytopes giving rise to a Linear Code

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TUE/P2 11:00–11:20

We study *Marginal Polytopes* which are certain 0/1-polytopes associated in a canonical way to Hierarchical Models. To the algebraic geometers, these polytopes are familiar as the polytopes associated to toric varieties. To the statisticians, they are familiar as the polytopes of expectation values for certain observables. It turns out that the marginal polytopes can be realized as full dimensional polytopes in such a way that their vertices exhibit a group structure. We describe an algorithm that classifies all 0/1-polytopes having these two properties.