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MAXIMUM LIKELIHOOD ESTIMATION OF TORIC FIBER PRODUCTS

Abstract: Toric fiber products generalize reducible hierarchical models and group-based models on phylogenetic trees. In this talk, we present results on maximum likelihood estimation of codimension-zero toric fiber products. We show that the ML degree is multiplicative over the components and as a corollary show that Buczynska-Wisniewski varieties associated to 3-valent phylogenetic trees have ML degree one. This also follows from a connection to a recent result about staged trees.

This talk is based on a joint work with Carlos Améndola and Dimitra Kosta

References:

- [1] C. Améndola, D. Kosta and K. Kubjas (2019) Maximum Likelihood Estimation of Toric Fano Varieties. arXiv:1905.07396.
- [2] S. Sullivant (2007) Toric fiber products. *Journal of Algebra* **316**: 560-577.