TORIC MODELS IN STATISTICS: EXPONENTIAL FAMILIES, MARKOV CHAINS, REVERSIBLE MARKOV CHAINS, DAG MODELS, BORDERS, DIFFERENTIAL ALGEBRA

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Monomial statistical models of on finite integer sample space have many applications. The case more commonly discussed is exponential families, but many other examples are known. We discuss Markov chains, reversible Markov chains and DAG models as curved exponential families. We discuss the border of such models and its relation with manipulation. Differential equations satisfied by the normalizing constant (partition function) have a special form in the monomial parameterization. The talk is based on joint work with L.. Malag, E. Riccomagno, M.-P Rogantin, H. Wynn.

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