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Beyond maximum-likelihood estimation BERGE ENGLERT, Natl Univ of Singapore — When the estimators in quantum state tomography or quantum process tomography are obtained by maximizing the likelihood, which has become the method of choice, a unique result is not obtained if the data are informationally incomplete. By combining maximum-likelihood (ML) estimation with Jaynes's maximum-entropy (ME) principle, a unique estimator can be determined, and this is possible by an efficient iterative algorithm. The resulting estimators, however, can have the familiar deficiencies of maximum-likelihood estimators. Alternative estimation procedures that avoid these drawbacks are wanted. The talk reports on MLME estimation as well as alternative approaches with a Bayesian touch. [References: Phys. Rev. Lett. 107 (2011) 020404; arXiv:1110.1202]

Berge Englert
Natl Univ of Singapore

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