

STANFORD UNIVERSITY
DEPARTMENT OF STATISTICS
DEPARTMENT SEMINAR

4:15 p.m., Thursday, July 25, 2002
Sequoia Hall Room 200
(Cookies at 3:45 in 1st Floor Lounge)

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On minimal Markov basis for sampling from discrete conditional distributions

Following Diaconis and Sturmfels (1998) we consider constructing connected Markov chain over finite discrete sample space for performing exact tests. Our new viewpoint to the problem is explicit consideration of minimality of Markov basis. Even the reduced Groebner basis is often not minimal. We derive minimal Markov bases for various relatively easy problems concerning two-way contingency tables. We also give many partial results on the surprisingly hard problem of three-way contingency tables with fixed two-dimensional marginals. Our argument does not use Groebner basis technique and is totally elementary.