



The University of Chicago
Department of Statistics

Master's Seminar

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**“Bayesian Variable Selection in Multiple Regression
with a p -norm Based Prior”**

**WEDNESDAY May 17, 2006 at 10:00 AM
110 Eckhart Hall, 5734 S. University Avenue**

ABSTRACT

A Bayesian method of variable selection in multiple regression is considered based on an inverse p -ball prior

$$\frac{1}{1 + V(n, p) \|x\|_p^n}$$

where $V(n, p)$ is the volume of the p -norm's unit ball in R^n .

The properties of the prior in two and several dimensions are explored as well as the calculus of the posterior surface. In addition, maximization of the likelihood given p is considered as a selection criterion.