MCMC Course – Fall 2005

Complete the following Worksheet by October 31

Go to assignment a0304_06 and adjust the parameters as follows: Lattice size 40×40, `nrpt` $= 32$. Change the random number generator seed to your personal one.

(1) Run the Metropolis program and subsequently the analysis program. List here the CPU time needed and the `actm` value with its error bar.

(2) Run the heatbath program and subsequently the analysis program. List here the CPU time needed and the `actm` value with its error bar.

(3) Perform the F-Test between the error bars. Is there a statistically significant difference (report the Q value)?

(4) Adjust the error bars for the differences in CPU time. Perform again the F-Test. Is there a statistically significant difference? If yes, which is the better updating scheme in the present situation?

Turn the worksheet in on November 1 in class.