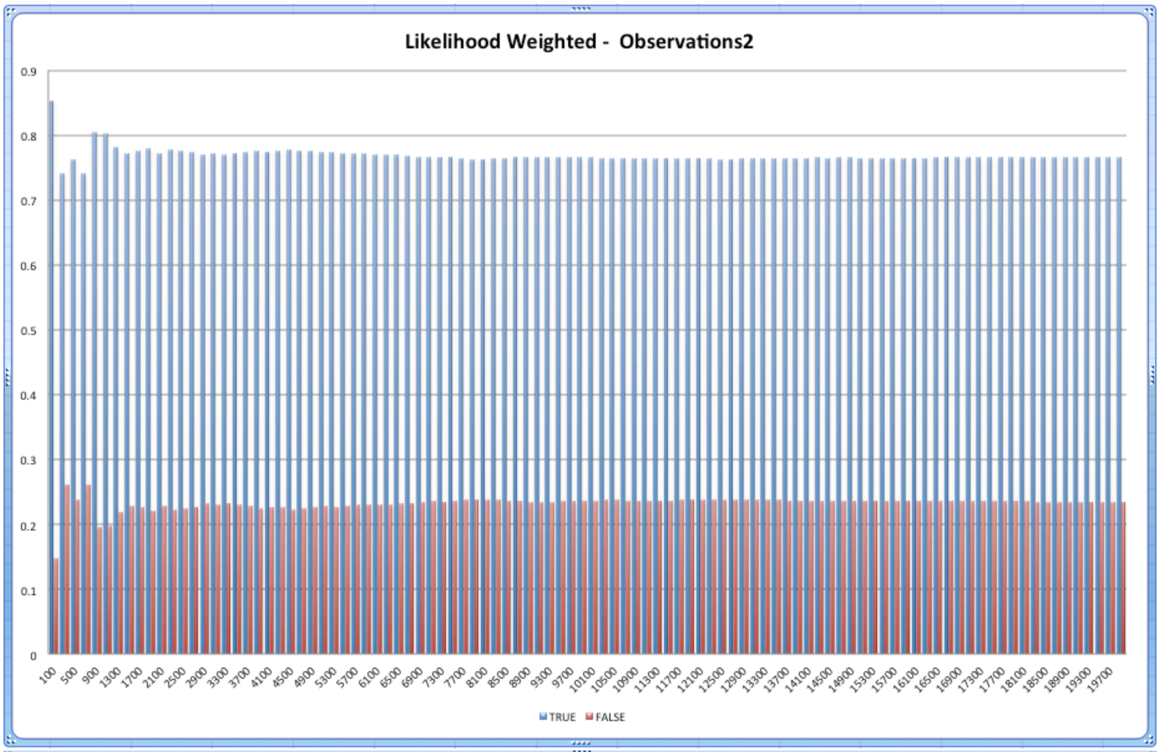
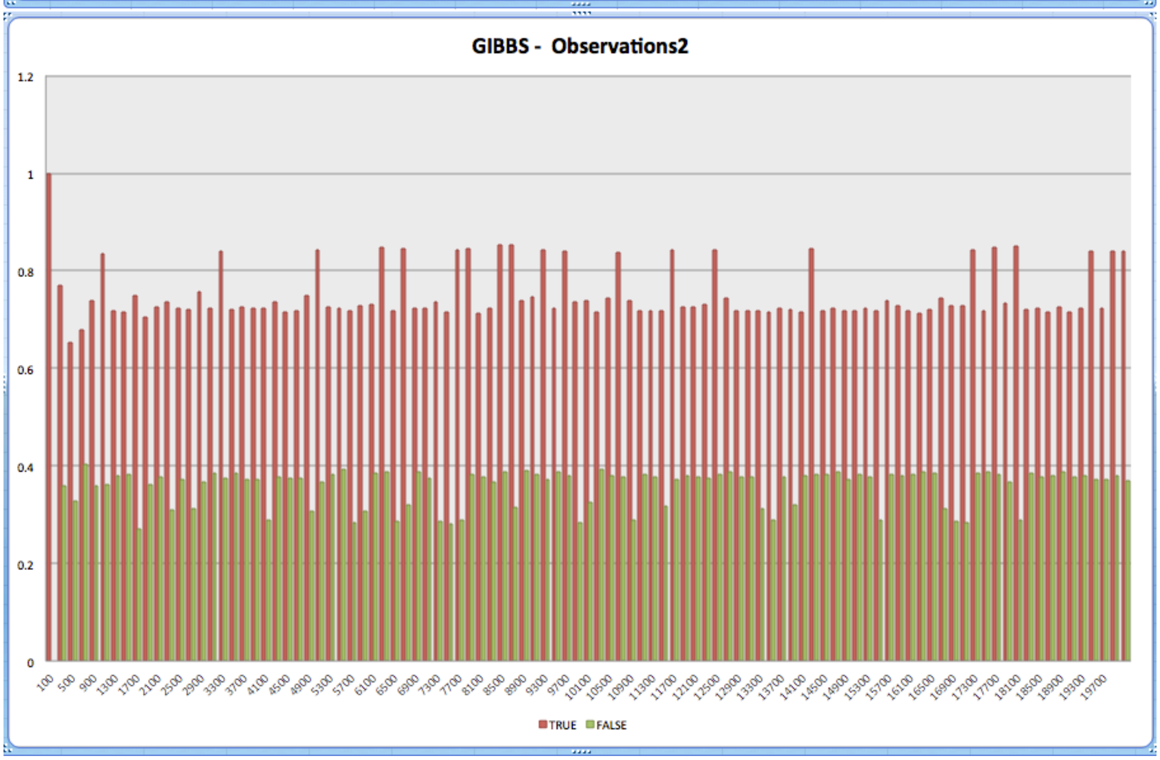
Likelihood weighted sampling method

1. Store in a vector U the evidence variables of the umbrellas of the observational files.
2. I created a library of hash tables that will store the outcome of every loop of RT|U0..UT (every table has a weighting, count of how many times that outcome was random generate and if the RT|UT was true of false).
3. Store in a vector Histori_R a random coin toss of probability using 0.2/0.8 for the first, and after that if the previous was true 0.7/0.3, or if the previous was false 0.3/0.7.
4. Set the weight to 1, and using my U and Histori_R vectors I calculate the probability of RT|U0…UT. I generate a key this particular outcome and I created the hash table with this information or I increment the counter of that key.
5. I generated a N loops of the 4 step creating tables or increasing the count
6. At the end, I multiply the weight by the number of times of every table and I add the ones where the RT|UT was true and the ones that RT|UT was false. I store in alpha the division of 1 in the addition of the probability that RT|UT was true and RT|UT was false.
7. Finally I multiply alpha times the probability RT|UT was true, and alpha time RT|UT was false, and print them.

Gibbs sampling method

1. Store in a vector U the evidence variables of the umbrellas of the observational files and store in a vector Histori_R a random coin toss of probability using 0.2/0.8 for the first, and after that if the previous was true 0.7/0.3, or if the previous was false 0.3/0.7.
2. Using my U and Histori_R vectors I calculate the P(R|Markov blanket of R) for every R and random choose to change the value of R0…RT tossing a coin with this previous probability. The R|Markov blanket of R formula that I am using is: alpha * Pr(Ri| Ri-1) * Pr(Ui | Ri) * Pr(Ri+1 | Ri) for Ri = 1 and Ri = 0. R0 is alpha * Pr(R0| R1) * Pr(U0 | R0) and RT = alpha * Pr(RT| RT-1) * Pr(UT| RT)
3. I generated a N loops of the 2 step keeping track of how many times RT was true and how many times it was false.
4. At the end calculate RT|U0…UT was true = divide the count of times that the RT|UT was true into the count of times that the RT|UT was true times count of times that the RT|UT was false, and RT|U0…UT was false = divide the count of times that the RT|UT was false into the count of times that the RT|UT was true times count of times that the RT|UT was false, and print them.


Likelihood Weighted - Observations2
TRUE
FALSE


GIBBS - Observations2
TRUE
FALSE