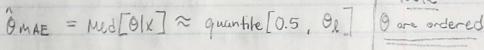
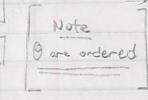


- (9) After ran ≈0 we Thin out, we use every Kth iteration after B to have iid samples
- (5) repeat process for σ^2 let K for $\theta = T$ K for σ^2
- Result: $\begin{cases} \theta_{6} \\ \theta_{8} \end{cases} \begin{bmatrix} \theta_{8+T} \\ \theta_{8+T} \end{bmatrix} \begin{bmatrix} \theta_{8+2T} \\ \theta_{7} \end{bmatrix} \begin{bmatrix} \theta_{8} \\ \theta_{7} \end{bmatrix}$ Lelements
- * these values are as good as P(GIX) and P(02 | X)
- · Point estimation of Thinned samples:

$$\hat{\theta}_{\text{mmse}} = \mathbb{E}[\theta | \mathbf{x}] \approx \theta = \begin{bmatrix} \frac{1}{2} & \frac{1}{2} & \theta \\ \frac{1}{2} & \frac{1}{2} & \frac{1}{2} & \frac{1}{2} \end{bmatrix}$$
 Note

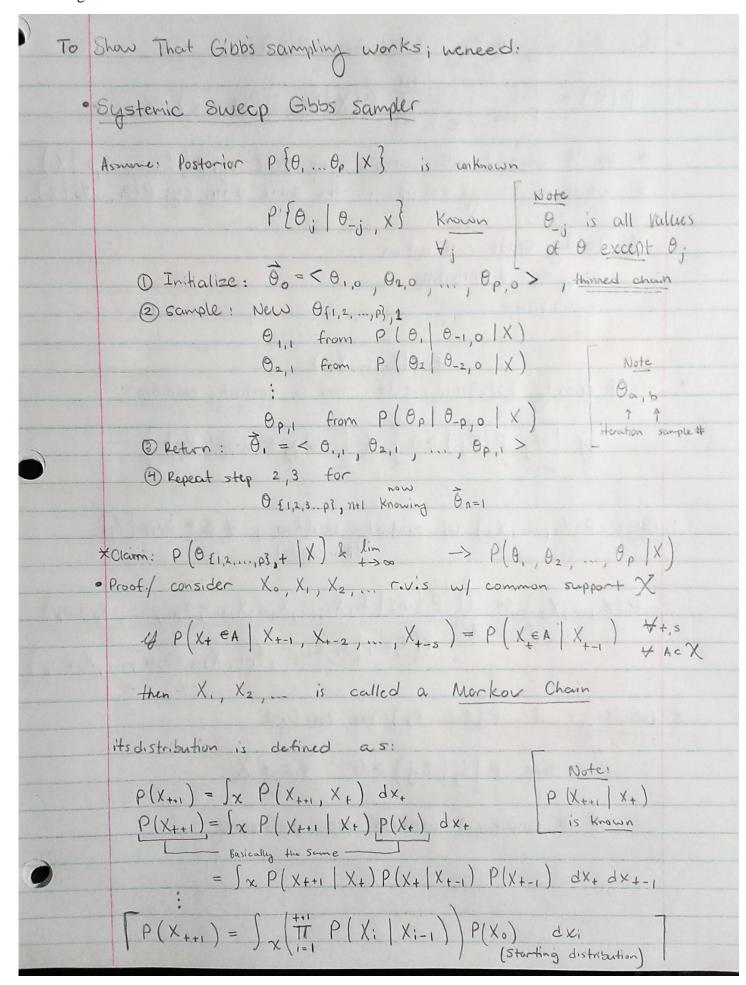




· Credible Region:
$$CR_{\theta; 1-\infty} = \left[quantile \left(\frac{\alpha}{2}, \theta_{\ell} \right), quantile \left(1 - \frac{\kappa}{2}, \theta_{\ell} \right) \right]$$

· Posterior Predictive distr.

$$= \int P(x^*|\theta) P(\theta|x) d\theta$$



· Time for any starting distribution P(Xo):

$$P(X) = \lim_{t \to \infty} \int_{X} \left(\frac{t+t}{TT} P(X, | X_{i-1}) \right) P(X_{0} = X) dX$$

* So it doesn't natter where you start e.g. P (0 {1,2,...,p?,0 | X) * we will always end up in the same distr. eg: P(0,,...+p/X)

X Stoady state distribution.

long term distribution

equibibrium

etc.

of P(X,,..., Xp)

· Joint density function: jet has a positivity condition

· Thm: P(X,,,,Xp) w/ positivity condition; & ā & Supp [Xj]

$$P\left(X_{1},...,X_{p}\right) \propto \frac{P}{\prod_{j=1}^{p} P\left(X_{j} \mid X_{1}, X_{2},...,X_{j-1}, X_{j+1} = \alpha_{j+1},...,X_{p} = \alpha_{p}\right)}}{P\left(X_{j} = \alpha_{j} \mid X_{1}, X_{2},...,X_{j-1}, X_{j+1} = \alpha_{j+1},...,X_{p} = \alpha_{p}\right)}$$

· cornallary: if P(X...Xp) has Pos. Cond.

then
$$P(X_j | X_{-j}) > 0 \quad \forall x_j \in X$$

* all conditional densities are non-zero