Problem 4

When including the τ constraint, the parameters become: You can notice these are close,

Parameters	New chain	Importance sampling
H_0	67.8 ± 0.9	7.0 ± 0.7
$\Omega_b h^2$	0.0223 ± 0.0002	0.0226 ± 0.0002
$\Omega_c h^2$	0.119 ± 0.002	0.113 ± 0.001
τ	0.0561 ± 0.0076	0.11 ± 0.03
A_s	$(2.10 \pm 0.03) \cdot 10^{-9}$	$(2.32 \pm 0.1) \cdot 10^{-9}$
n_s	0.971 ± 0.005	0.985 ± 0.004

but crucially very different for τ. Its quite interesting to notice how close to the constraint the chain converged to, not only pushing τ to be smaller (and more accurate) but the same for σ_τ.

Below are Fourier transform plot that show convergence as before (with more independent samples - roughly).