Posterior predictions with test data Test data 1 effect model 2 effect model 6e-05 -6e-05 -8e-05 density density 6e-05 density 4e-05 density 2e-05 **-**2e-05 -2e-05 -0e+00 -0e+00 **-**0e+00 -20000 40000 40000 15000 20000 60000 10000 10000 20000 30000 charges charges charges 5 effect model 3 effect model 4 effect model 6e-05 -6e-05 -6e-05 density. density 4e-05. 4e-05 density 2e-05 2e-05 -2e-05 -0e+00 -0e+00 -0e+00 -40000 30000 30000 10000 40000 10000 20000 40000 10000 20000 20000 30000 0 charges charges charges 6 effect non-hierarchical model 6 effect hierarchical model **Linear Mixed Model** 6e-05 -6e-05 -6e-05 -4e-05 density 4e-05 density 4e-05 2e-05 -2e-05 -2e-05 -0e+00 -0e+00 -0e+00 -10000 40000 10000 40000 10000 30000 20000 30000 20000 30000 20000 40000 0 0 0 charges charges charges