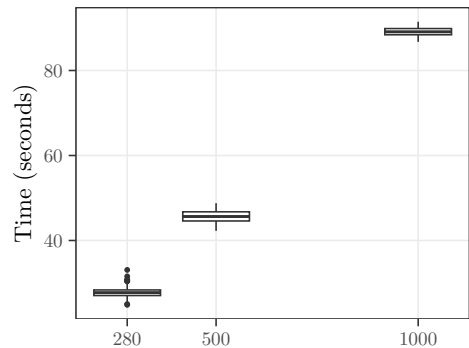
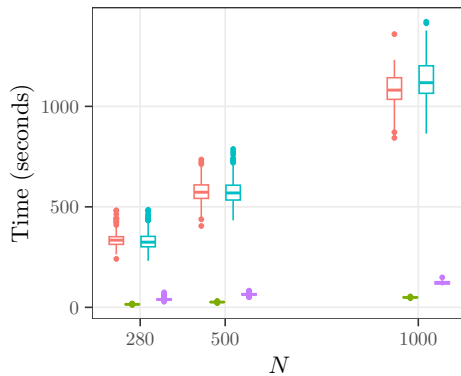


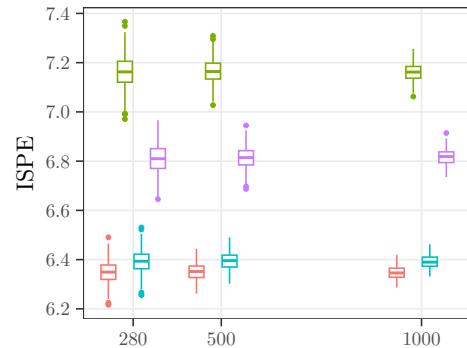
(a) Computation Time (mv-FPCA)



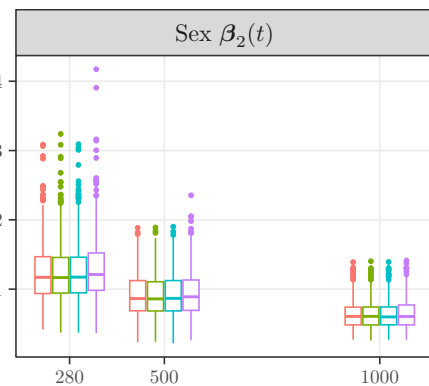
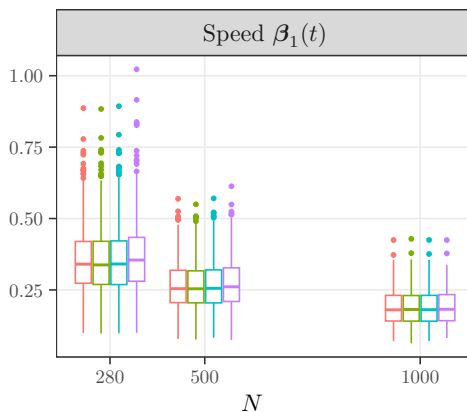
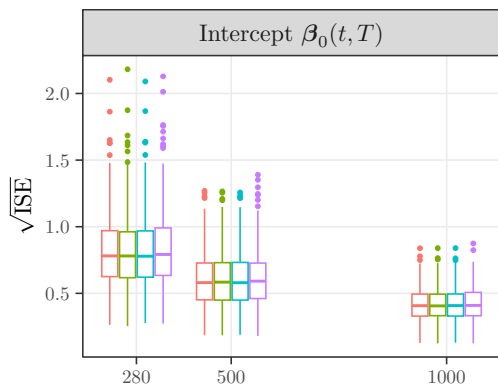
(b) Computation Time (Model Fit)






(c) Individual Prediction Error



(d) Fixed Effects Estimation Error



Model:  Polynomial  Naive  Spline  ml-FPCA