



Figure 1: Comparison between NUTS and our samplers for SIR model with identity covariance matrix: The x-axis in each plot corresponds to the desired accept probability  $\delta$  of the primal-dual averaging algorithm. In the first row, y-axis is the ESS per gradient for the parameters  $(\beta, \gamma, \xi, \phi)$ . ESS of samples of NUTS, eHMC, eHMCq and eHMCu is estimated by `ess` of R package `mcmcse`.