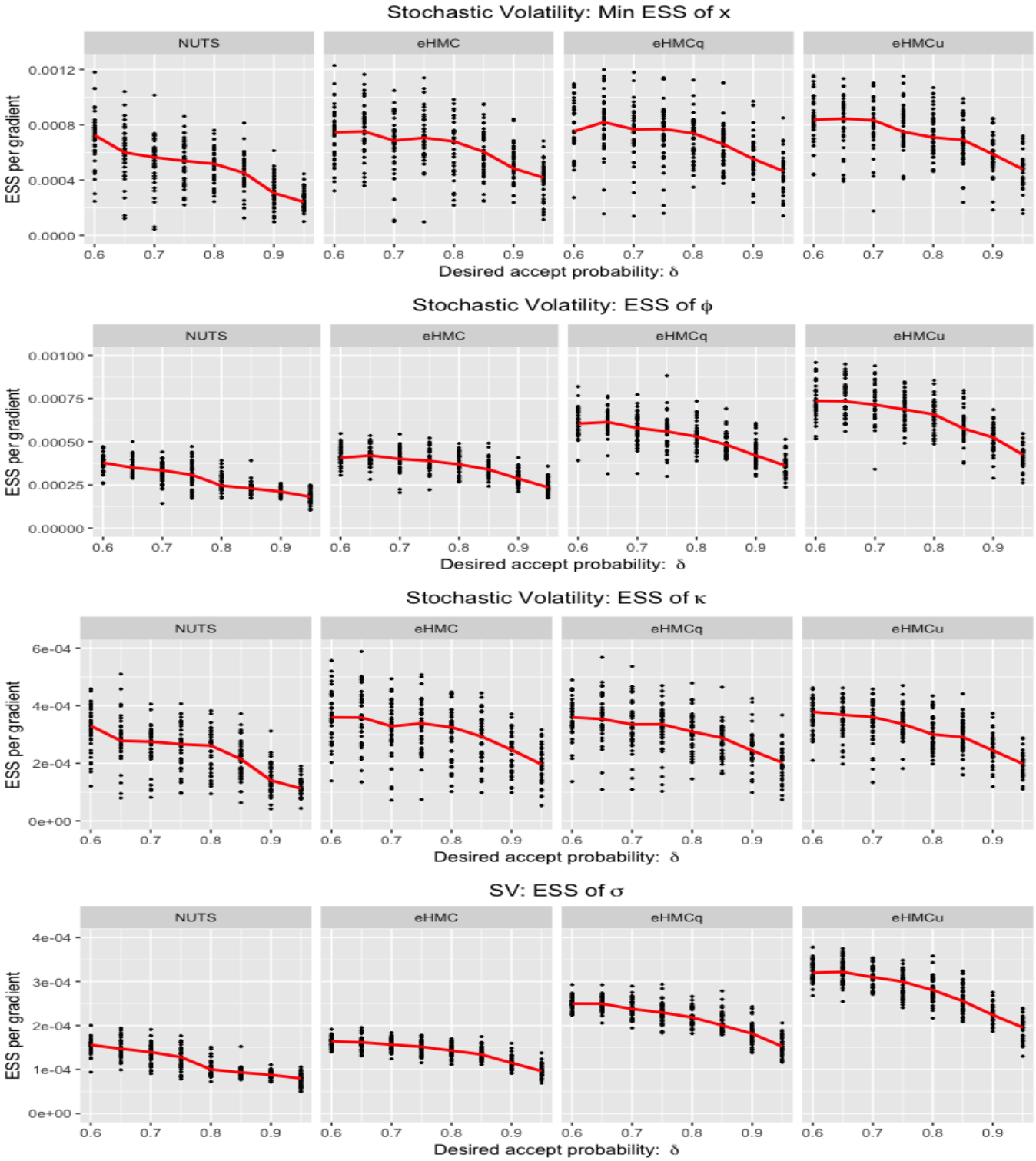

Figure 4: Comparison between NUTS and our samplers for stochastic volatility model with diagonal metric adaptation (tuned by `Rstan`'s default setting): The x-axis in each plot corresponds to the desired accept probability δ of the primal-dual averaging algorithm.The y-axis is the minimum ESS per gradient for each parameter group. ESS of samples of NUTS, eHMC, eHMCq and eHMCu is estimated by `ess` of `R package mcmcse`.

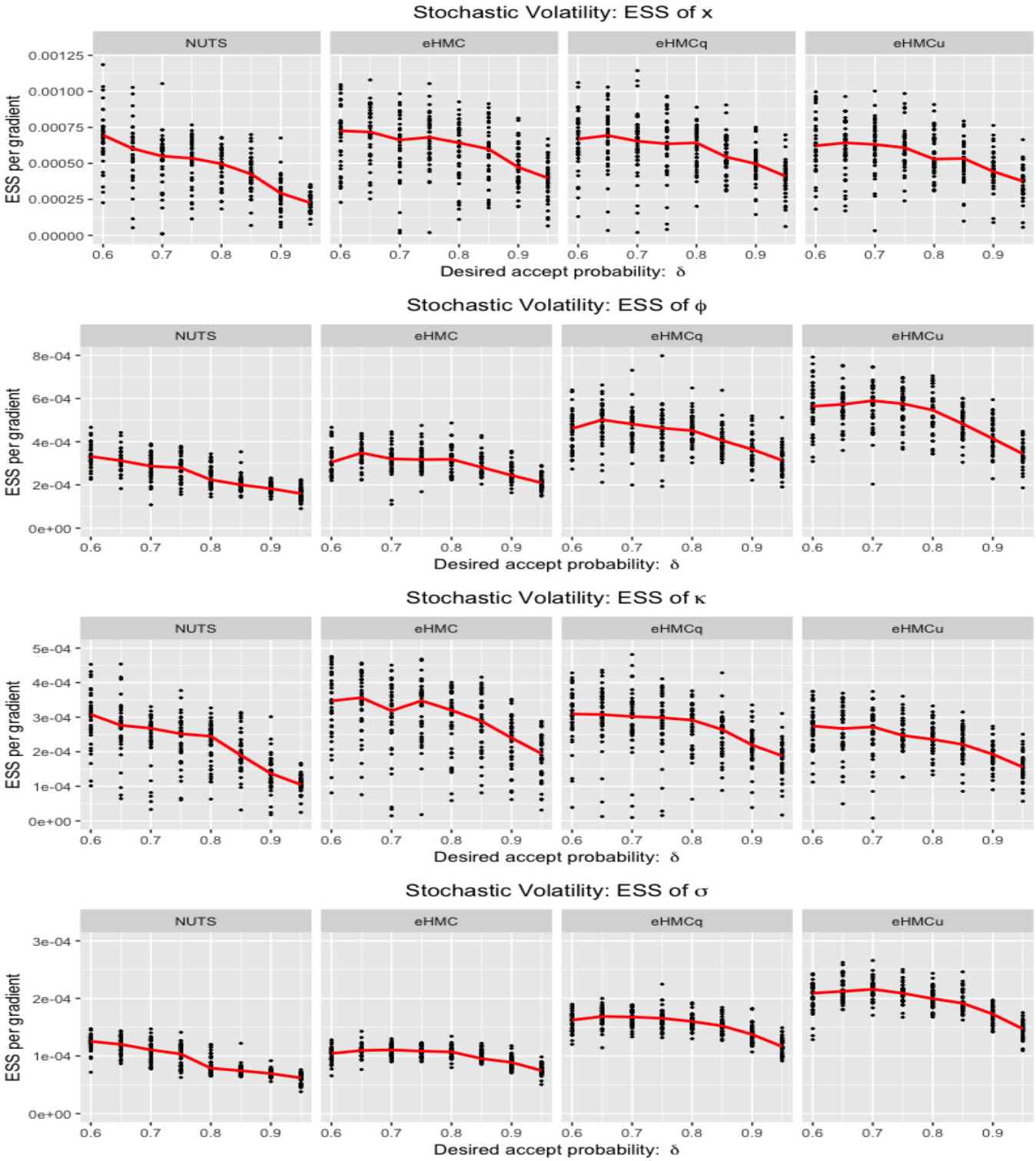

Figure 5: Comparison between NUTS and our samplers for stochastic volatility model with diagonal metric adaptation (tuned by `Rstan`'s default setting): The x-axis in each plot corresponds to the desired accept probability δ of the primal-dual averaging algorithm.The y-axis is the minimum ESS per gradient for each parameter group. ESS of samples of NUTS, eHMC, eHMCq and eHMCu is estimated by `effectiveSize` of `R package coda`.

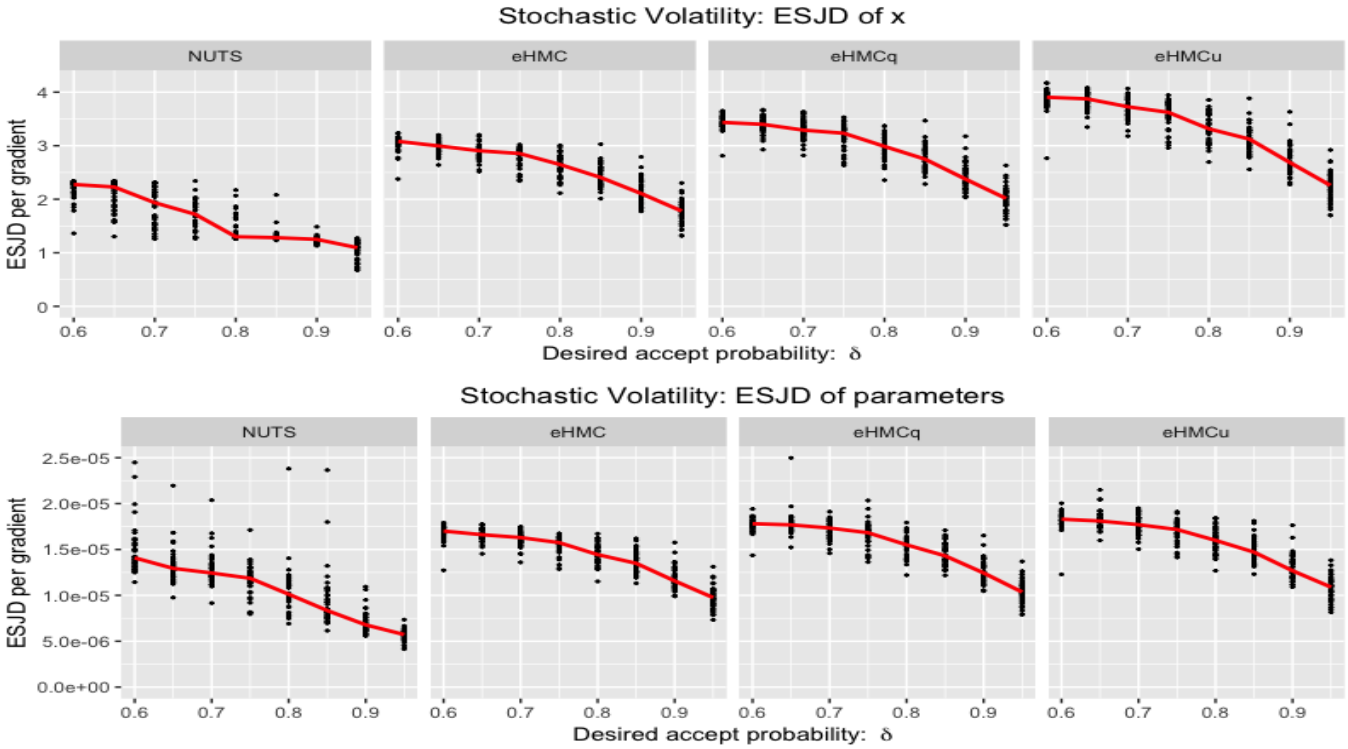

Figure 6: Comparison between NUTS and our samplers for stochastic volatility model with diagonal metric adaptation (tuned by `Rstan`'s default setting): The x-axis in each plot corresponds to the desired accept probability δ of the primal-dual averaging algorithm.The y-axis is the ESJD per gradient for each parameter group.