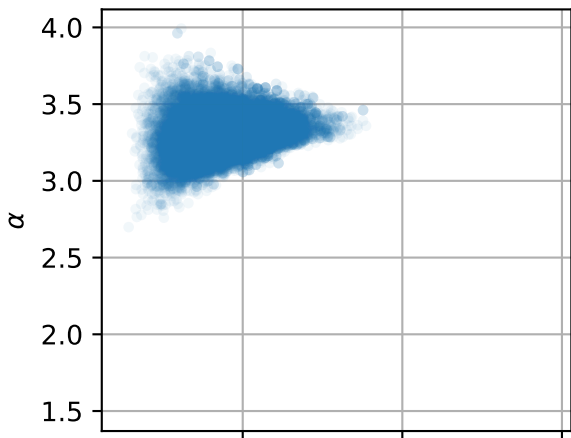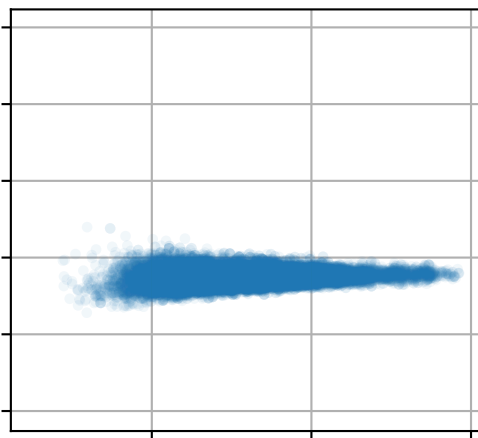Empirical Bivariate Posteriors