



Figure S4 Comparison of INLA and MCMC. INLA (solid line) and MCMC estimates (histogram) for different number of iterations for MCMC for the posterior marginal of σ_u^2 and σ_e^2 for a large synthetic pedigree and simulated dataset of $n_p = 100072$ individuals: 10000 iterations (**A**) σ_u^2 and (**B**) σ_e^2 , 100000 iterations (**C**) σ_u^2 and (**D**) σ_e^2 , 500000 iterations (**E**) σ_u^2 and (**F**) σ_e^2 . INLA used 7.4 minutes and MCMC used 29 minutes, 3.6 hours and 17.9 hours, respectively.