SIR using Gillespie's discrete event model  $(\beta = 1.00e-01, \gamma = 1.00e-02, \mu = 0.00e+00, \epsilon = 0.00e+00, I_0 = 1.00e$ -0.005-0.006-0.007-0.008-0.009-0.010-0.011

300

population size  $N_{pop}$ 

200

100

500

400

covariance of susceptible and infected