

Supplementary Information: Rational evaluation of various epidemic models based on COVID-19 data in China

Wuyue Yang^{2a)}, Dongyan Zhang^{3a)}, Liangrong Peng⁴, Changjing Zhuge^{3b)}, Liu Hong^{1b)}

¹School of Mathematics, Sun Yat-sen University, Guangzhou, 510275, P.R.C.

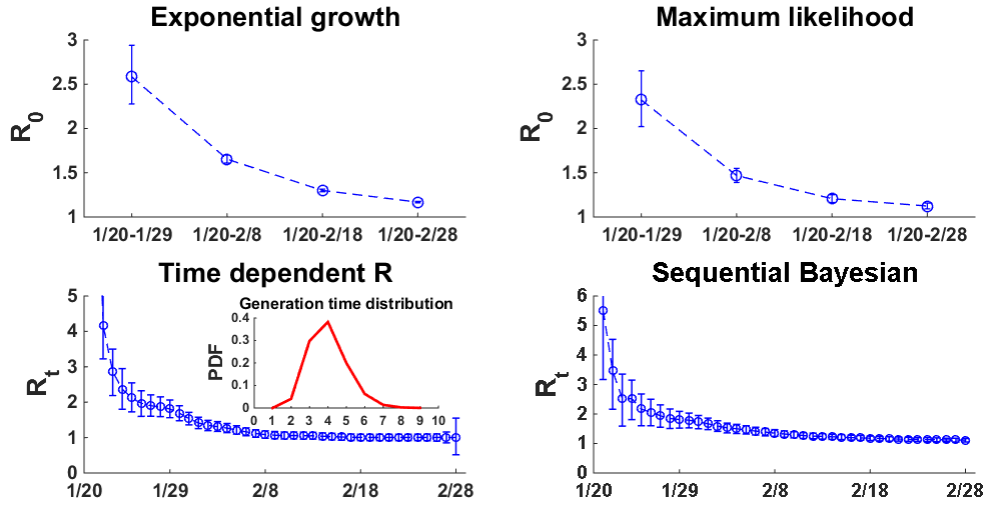
²Yau Mathematical Sciences Center, Tsinghua University, Beijing, 100084, P.R.C.

³Beijing Institute for Scientific and Engineering Computing, Faculty of Sciences, Beijing University of Technology, Beijing 100124, P.R.C.

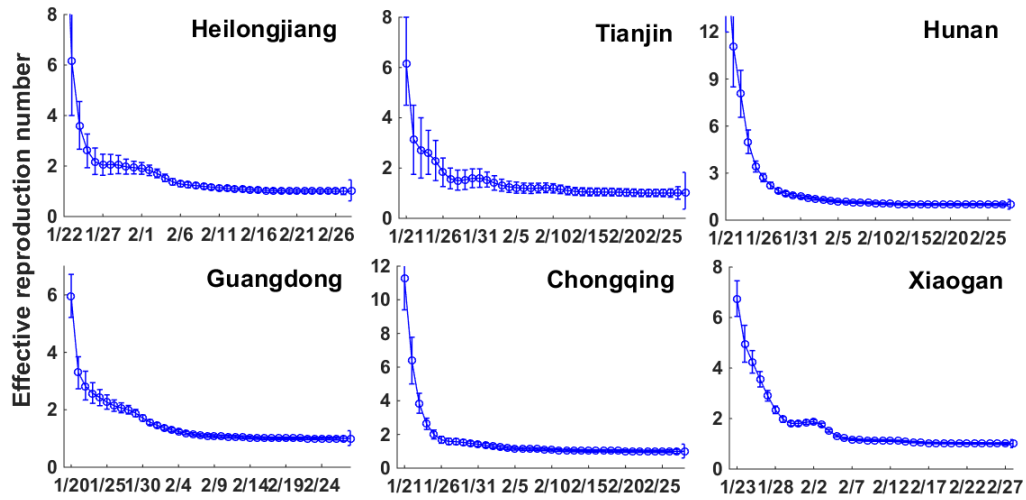
⁴College of Mathematics and Data Science, Minjiang University, Fuzhou, 350108, P.R.C.

^{a)} Those authors contribute equally to this work.

^{b)} Author to whom correspondence should be addressed. Electronic mail: hongliu@sysu.edu.cn (LH), zhuge@bjut.edu.cn (CZ)



(a) Shanghai from 01/20/2020 to 02/28/2020.



(b) Effective reproduction number for six provinces/cities in China based on the method of time dependent reproduction number.

FIG. 1. Basic/effective reproduction number for COVID-19 derived from four different statistical methods.

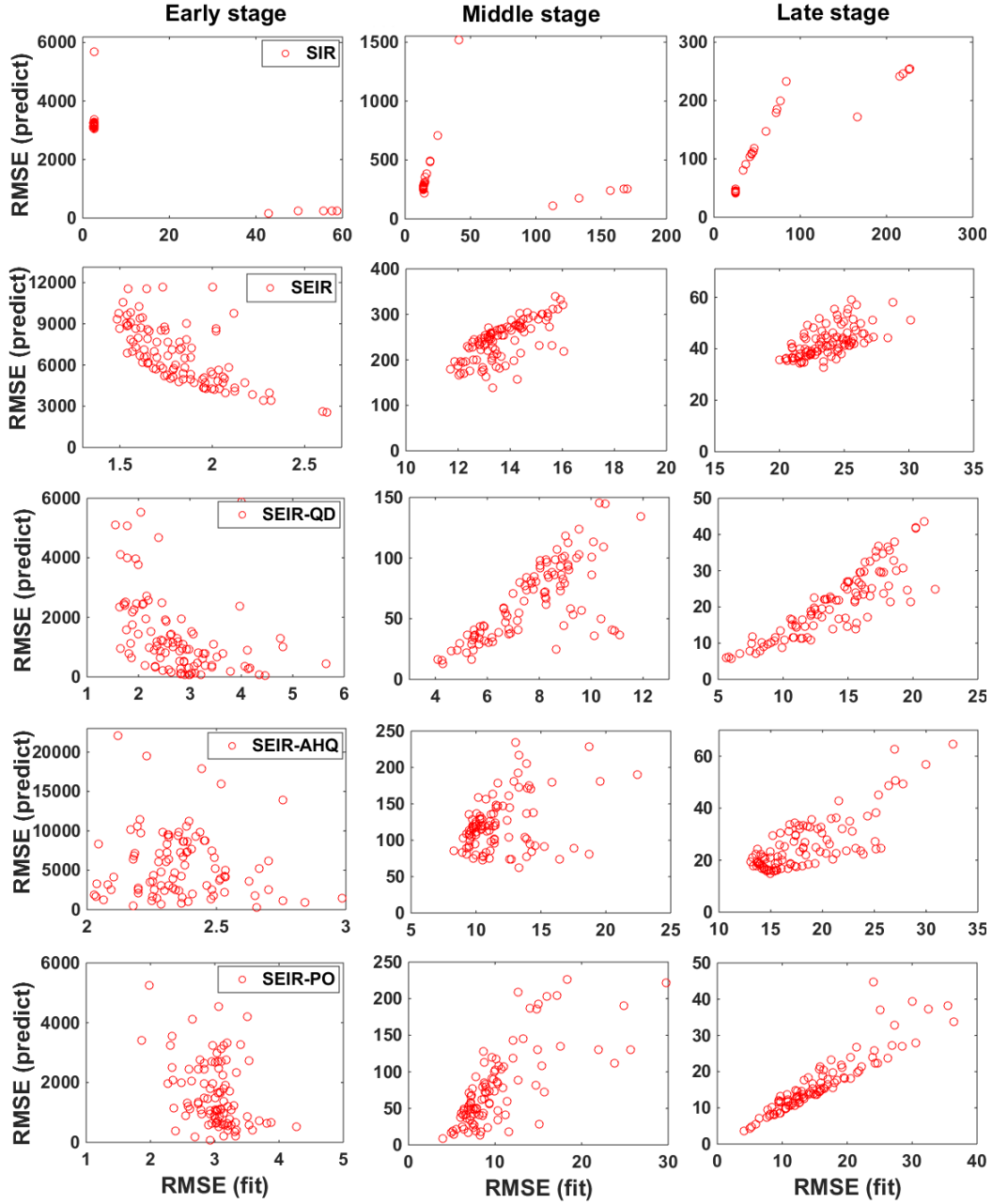


FIG. 2. The correlation between RMSE of training data set and RMSE of test data set for five dynamical models based on the data of the first 10 (early), 20 (middle) and 30 (late) days of COVID-19 epidemic in Shanghai from 01/20/2020 to 02/28/2020.

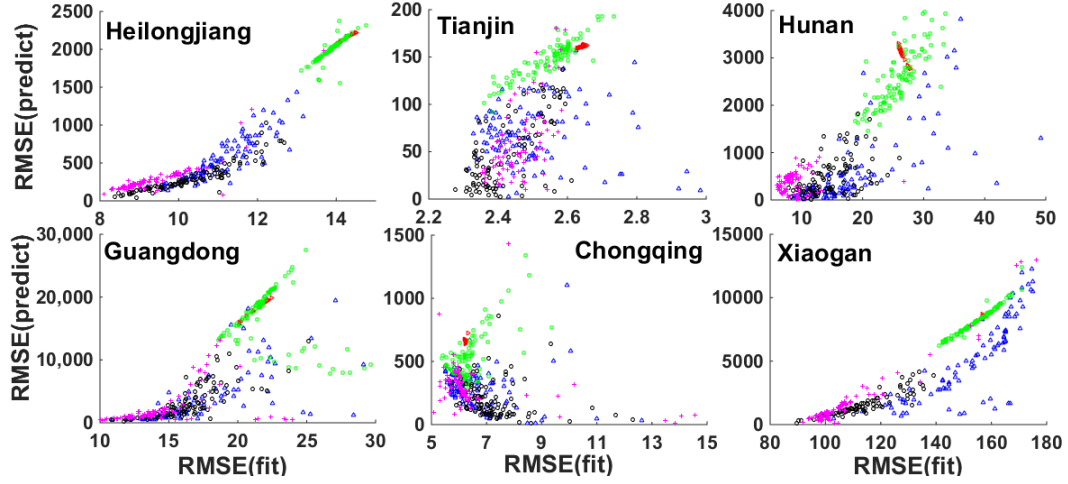


FIG. 3. The correlation between RMSE of training data set and RMSE of test data set for five dynamical models (illustrated by different colors) based on the COVID-19 epidemic data from 01/20/2020-02/28/2020 for six provinces/cities mentioned in the main text.