

Figure. S1 Comparison of the average RMSE for 10-30 day of (a) Z500 and (b) T850 achieved by training continuous model using different numbers of residual blocks (o and * represent the number of residual blocks used by ResNet and SE-ResNet model in this paper, respectively)

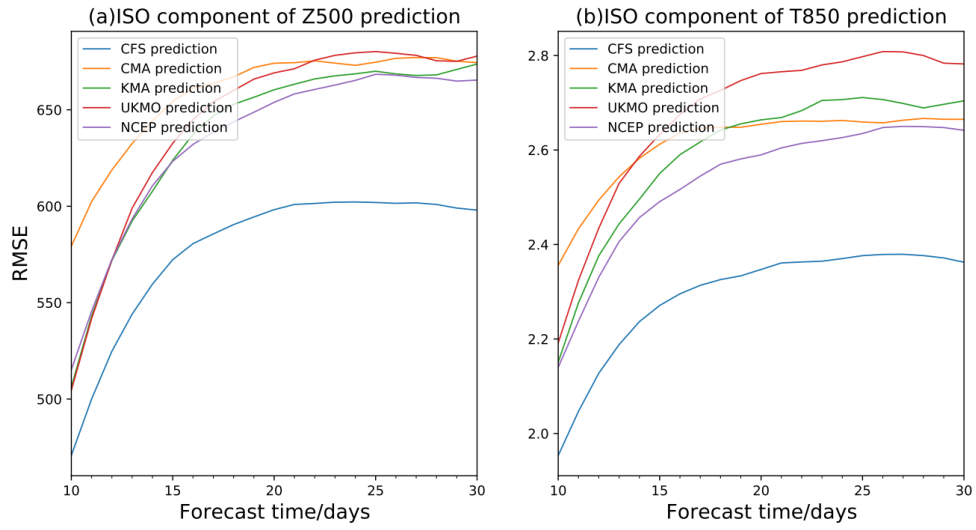


Figure. S2 Comparison of the RMSE for 10-30 day of (a) Z500 and (b) T850 achieved by different models

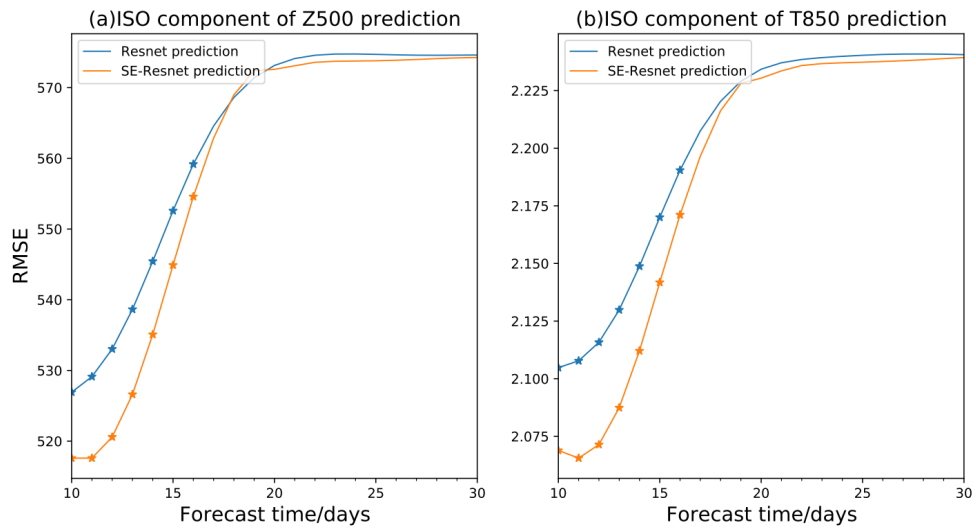


Figure. S3 Comparison of the RMSE for 10-30 day of (a) Z500 and (b) T850 achieved by ResNet and SE-ResNet model (* represents that the corresponding forecast time passes the significance test ($\alpha = 0.05$))

Table. S1 Comparison of the average RMSE for 10-30 day of Z500 and T850 achieved by SE-ResNet and ResNet model (SE-ResNet/ ResNet) using different test year

Test year	Z500[m ² s ⁻²]	T850[K]
(2007,2008)	561.14/565.21	2.19/2.20
(2009,2010)	567.92/572.66	2.24/2.26
(2011,2012)	570.70/574.64	2.18/2.20
(2013,2014)	556.41/560.09	2.20/2.21
(2015,2016)	567.05/571.18	2.19/2.20
(2017,2018)	558.68/562.31	2.19/2.20

Table. S2 Comparison of the average RMSE for 10-30 day of Z500 and T850
 achieved by different model

Model	Z500[m ² s ⁻²]	T850[K]
CMA	658.19	2.61
UKMO	644.40	2.68
KMA	637.31	2.59
NCEP	634.47	2.53
CFS	577.65	2.29
ResNet	562.31	2.20
SE-ResNet	558.68	2.19