Supplements of

Regionally optimized fire parameterizations using feed-forward neural networks

Yoo-Geun Ham[1*], Seung-Ho Nam[2], Geun-Hyeong Kang[2], and Jin-Soo Kim[3*]

[1] Department of Environmental Planning, Graduate School of Environmental Studies, Seoul National University, Seoul, South Korea

[2] Department of Oceanography, Chonnam National University, Gwangju, 61186, South Korea

[3] Low-Carbon and Climate Impact Research Centre, School of Energy and Environment, City University of Hong Kong, Tat Chee Ave, Kowloon Tong, Hong Kong, People's Republic of China

Correspondence to: Prof. Yoo-Geun Ham (yoogeun@snu.ac.kr), and Prof. Jin-Soo Kim (jinsoo.kim@cityu.edu.hk)

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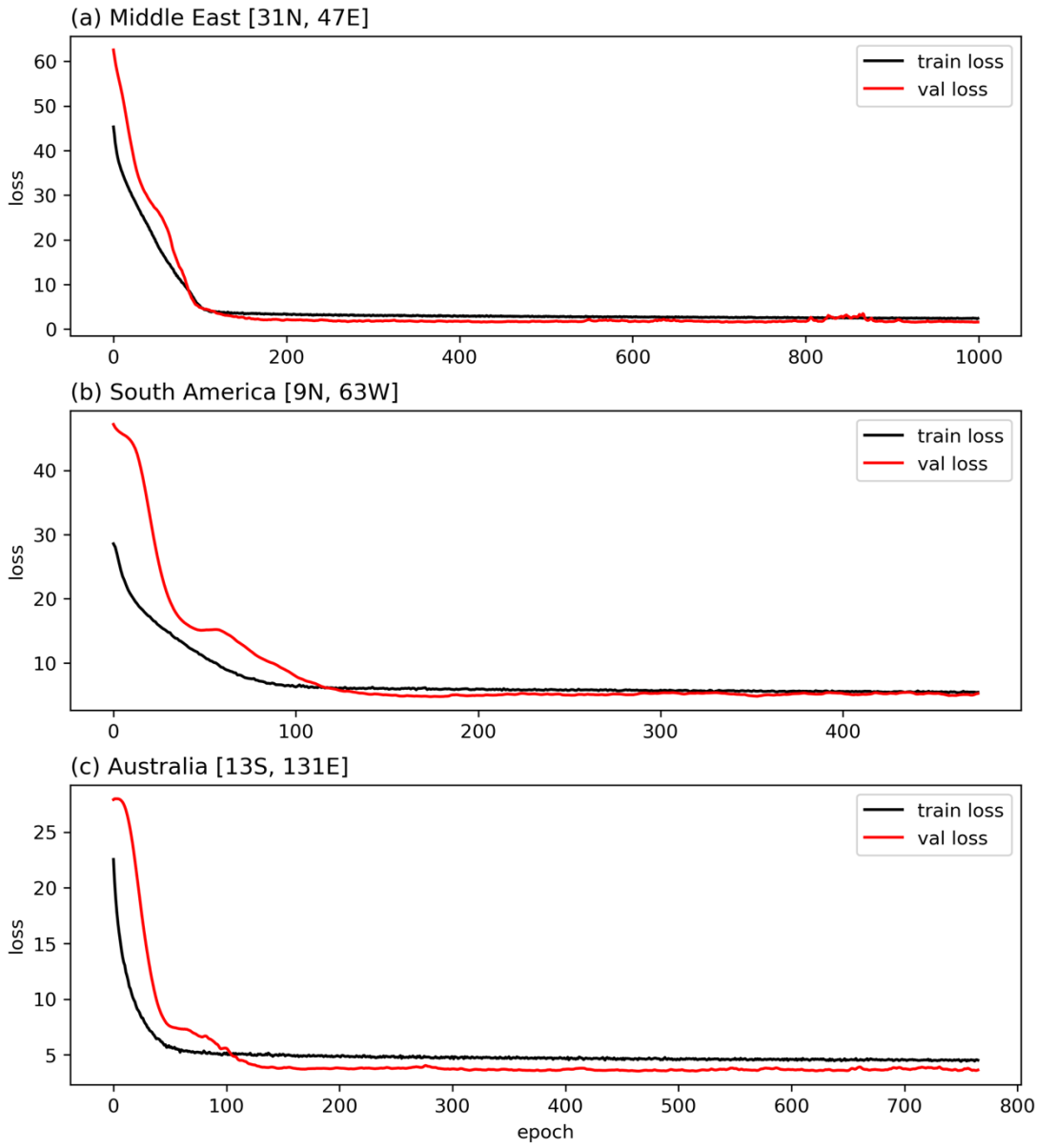
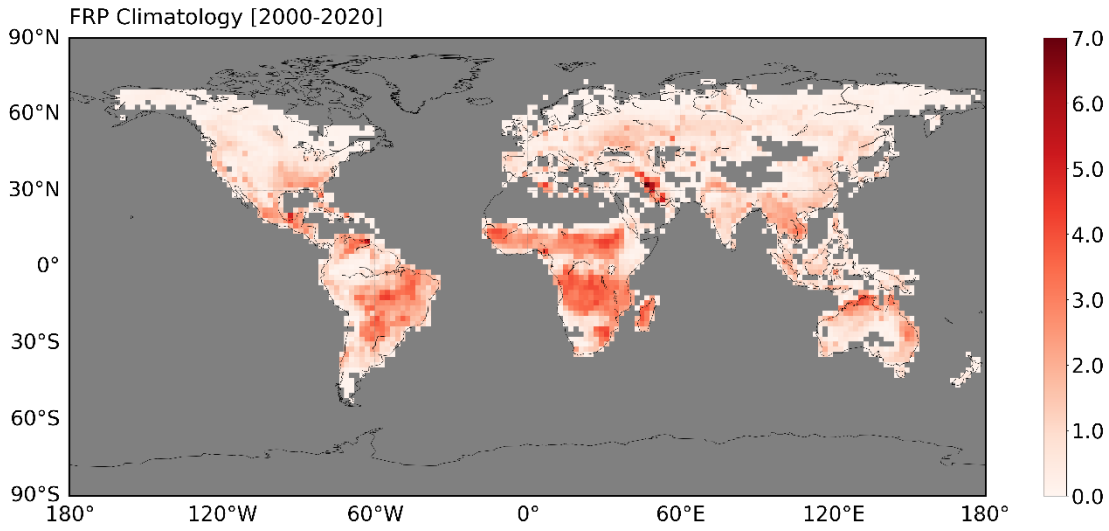
	EXP1	EXP2	EXP3	EXP4	EXP5
Training period	2001–2014	2005–2018	2009–2020 & 2001–2002	2013–2020 & 2001–2006	2017–2020 & 2001–2010
Validation period	2015–2016	2019–2020	2003–2004	2007–2008	2011–2012
Testing period	2017–2020	2001–2004	2005–2008	2009–2012	2013–2016

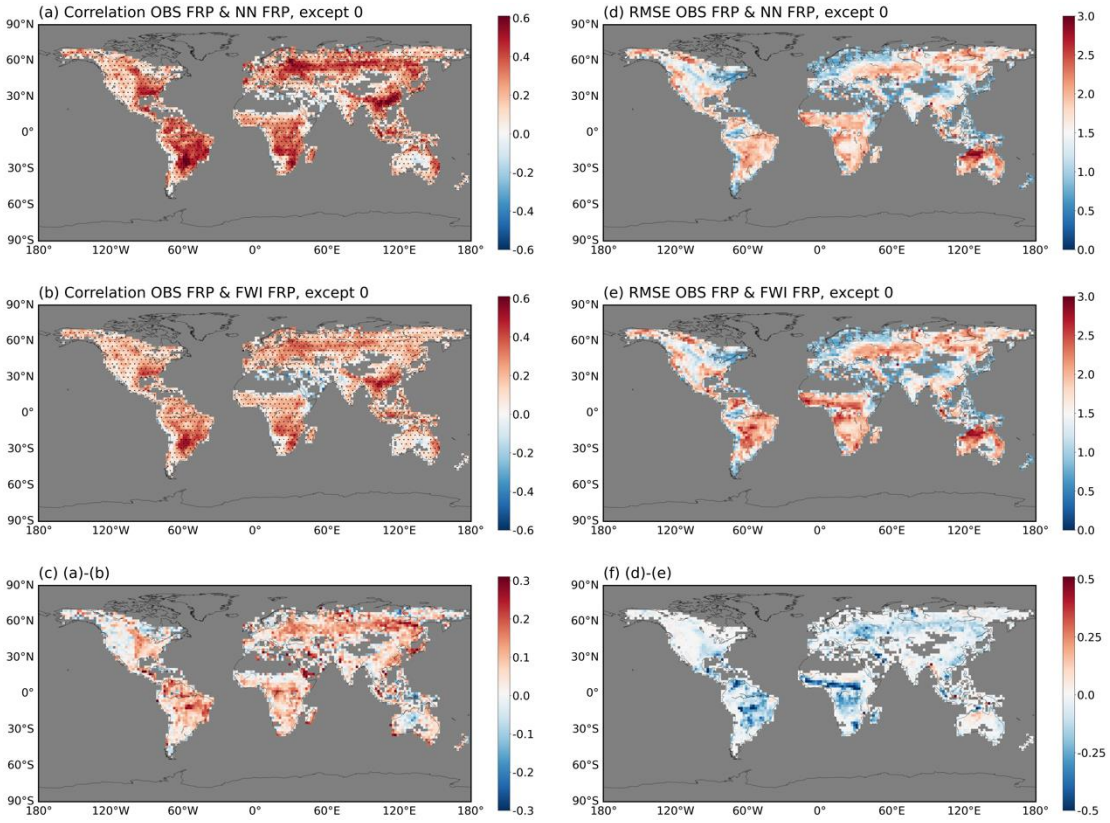
17 Supplementary Table S1. Periods for the training, validation, and testing of the
18 FFNNs. Note that every period starts from Jan. 1st and end at Dec. 31st.



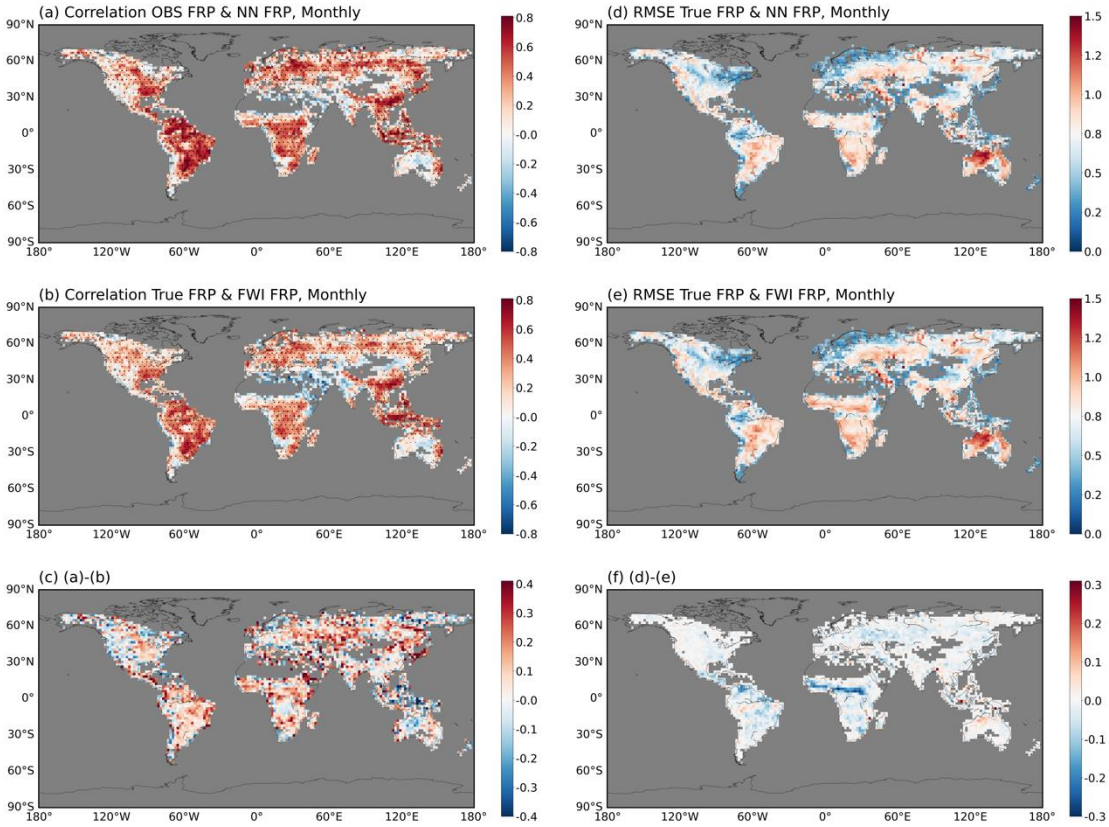
Supplementary Fig. S1. Training (black) and validation loss (red) with respect to the epoch at the grid point in (a) the middle East (centered at 31°N, 47°E), (b) South America (centered at 9°N, 63°W), and (c) Australia (centered at 13°S, 131°E).



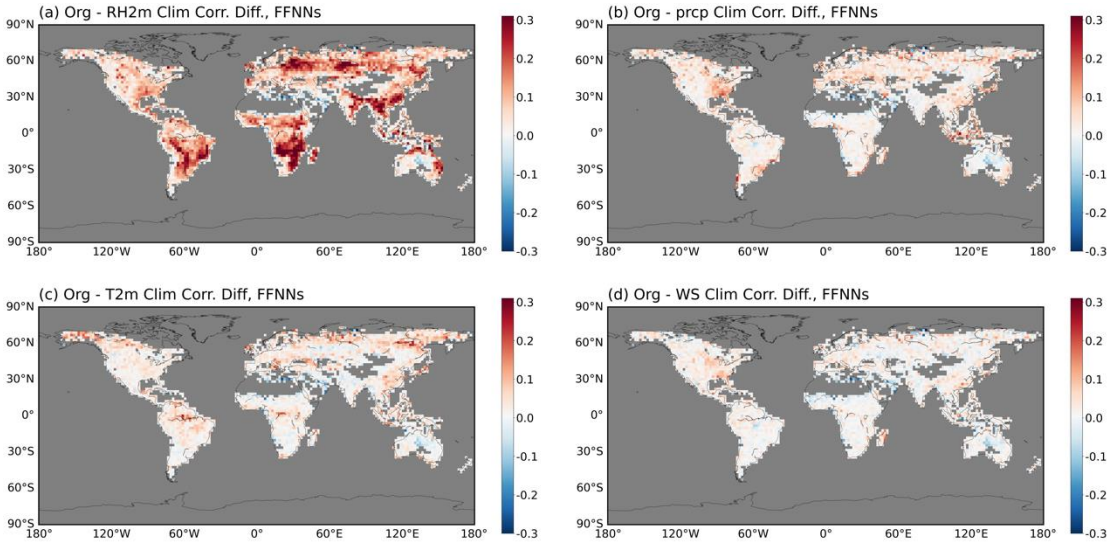
Supplementary Fig. S2. The spatial distribution of the FRP climatology during 2001-2020 period.



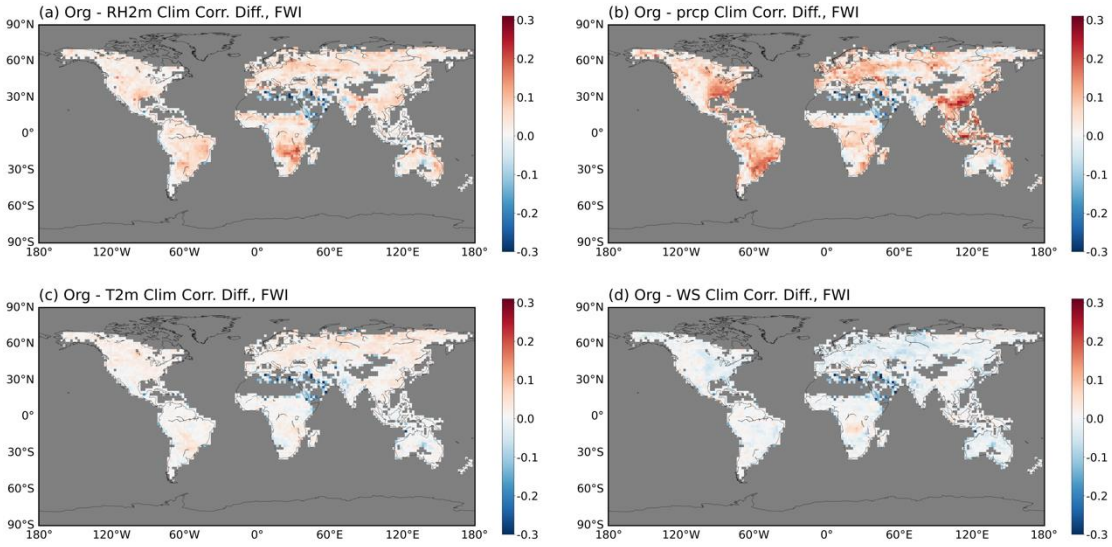
Supplementary Fig. S3. Same as main Fig. 2, but for cases where the observed FRP > 0.



Supplementary Fig. S4. Same as main Fig. 2, but using monthly-averaged FRP.



Supplementary Fig. S5. Difference in the correlation skill of the original FRP estimation in the FFNNs from that by using (a) the RH2m, (b) PRCP, (c) T2m, and (d) WS10m as the daily climatological values.



Supplementary Fig. S6. Difference in the correlation skill of the original FRP estimation in the FWI-based model from that by using (a) the RH2m, (b) PRCP, (c) T2m, and (d) WS10m as the daily climatological values.