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Spatiotemporal variation of radionuclide dispersion from nuclear power plant accidents using FLEXPART mini-ensemble modeling

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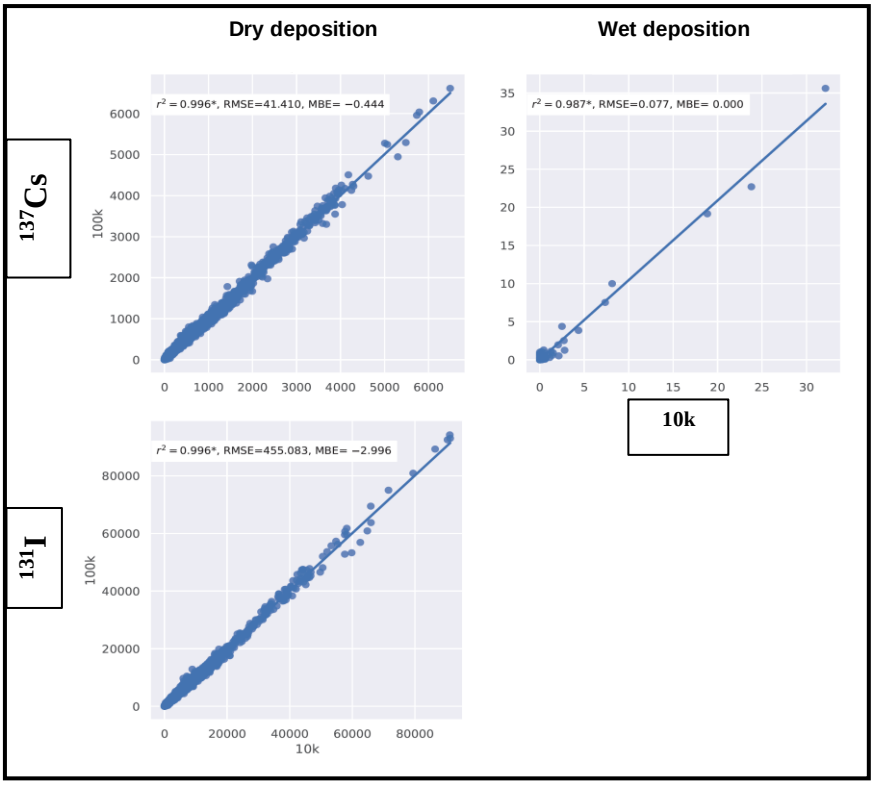


Figure S1 Scatter plot between dry and wet deposition simulations (kBq/m2) using 100k (y axis) and 10k (x axis) Lagrangian particles. Because we only considered the gas phase of ^{131}I (bottom row), it undergoes no wet deposition.

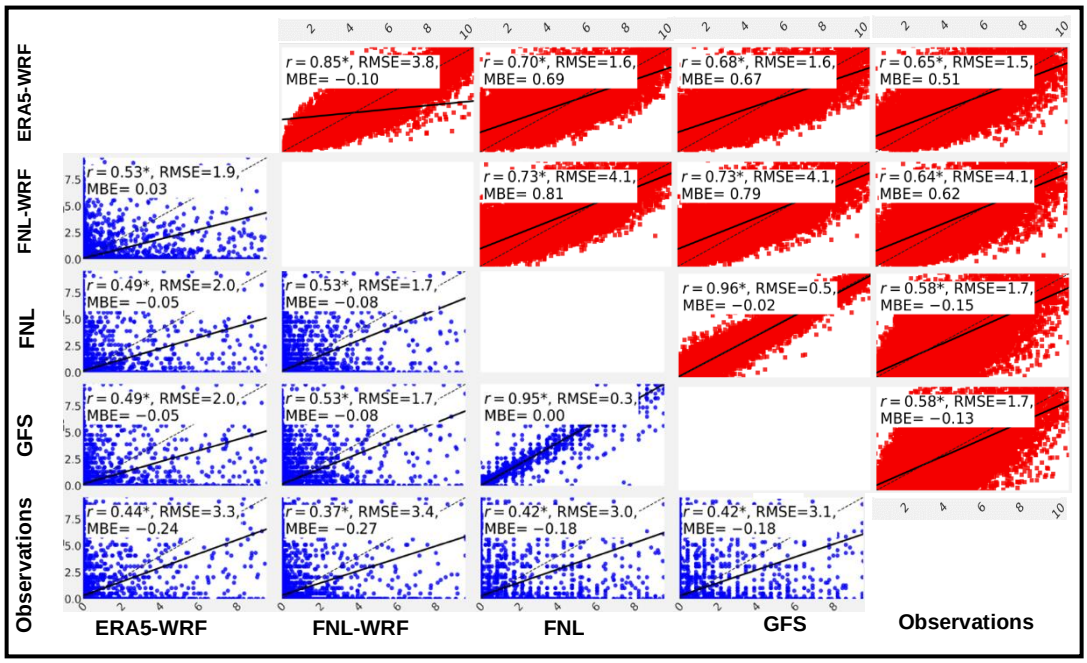


Figure S2 Scatter plot of observed daily total precipitation (mm, shown as blue circles) and daily mean wind speed (m/s, shown as red squares) against FLEXPART/FLEXPART WRF inputs. The scatter plot of observed and simulated daily surface temperature (k) is shown in S3.

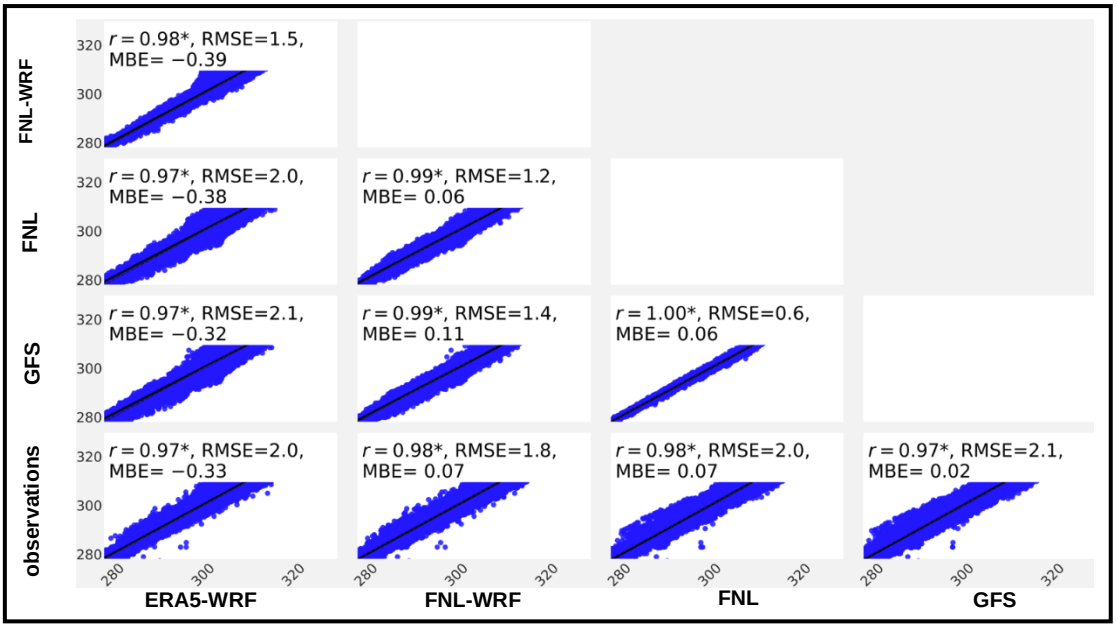


Figure S3 Same as Figure S2 but for the daily average of the temperature (k).

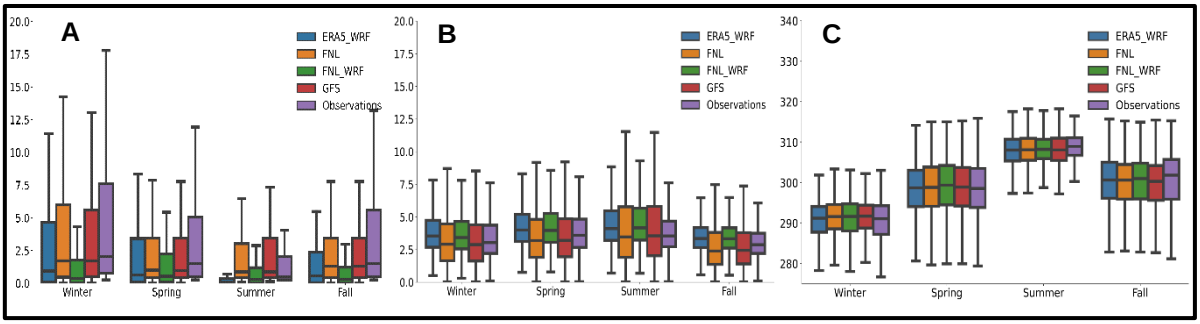


Figure S4 The seasonal boxplots of observed and simulated precipitation in units of mm (A), wind speed in unit of m/s (B), and temperature in unit of k (C).

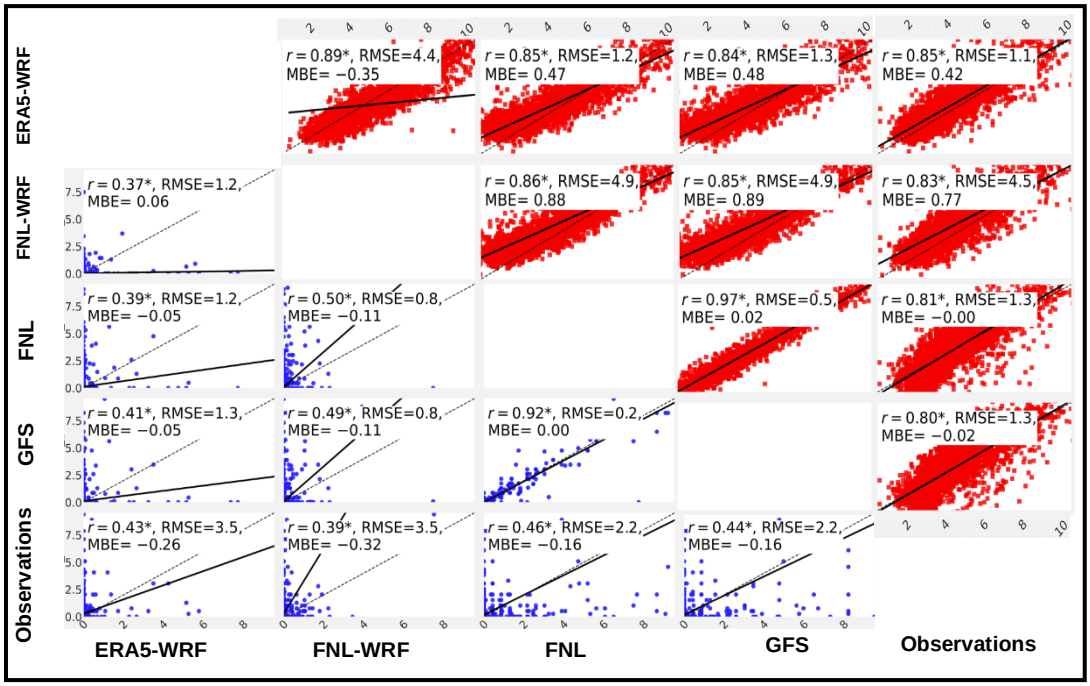


Figure S5 Same as Figure S2 but for the domain including B-NPP and Qatar between 24°N-26.5°N and 50.3°E-53°E.

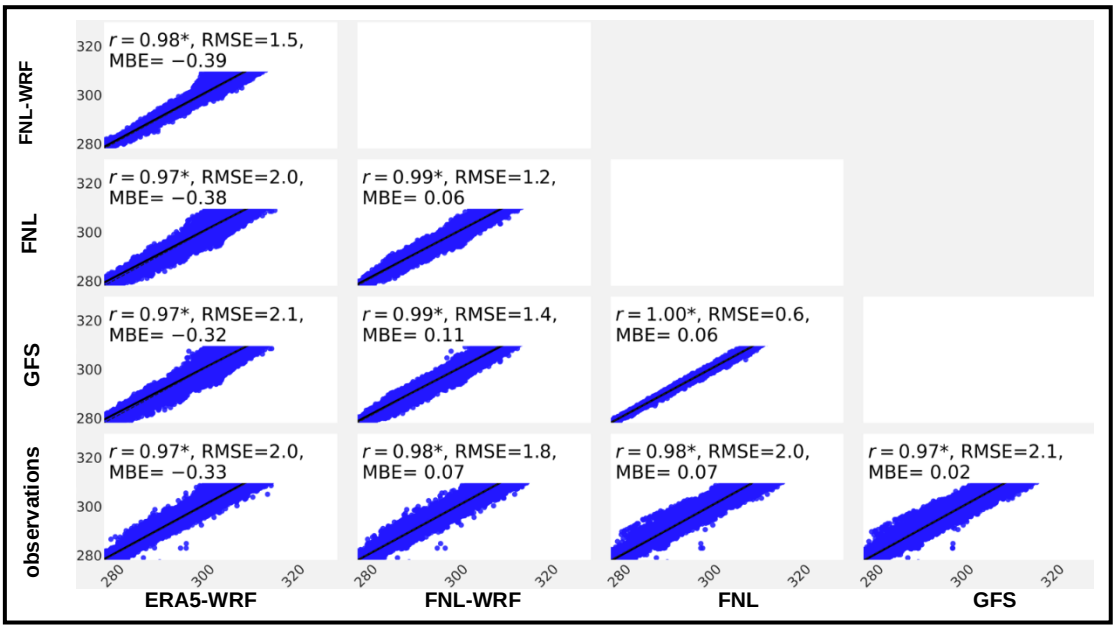


Figure S6 Same as Figure S3 but for the domain including B-NPP and Qatar between 24°N-26.5°N and 50.3°E-53°E.

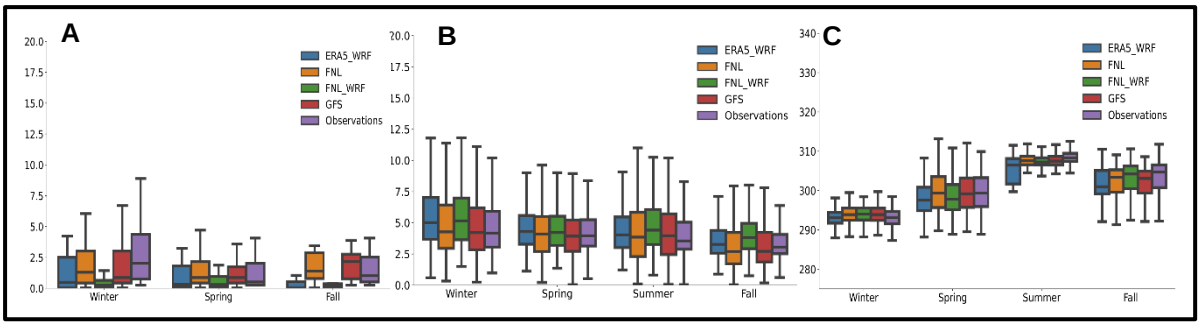


Figure S7 Same as Figure S4 but for the domain including B-NPP and Qatar between 24°N-26.5°N and 50.3°E-53°E.

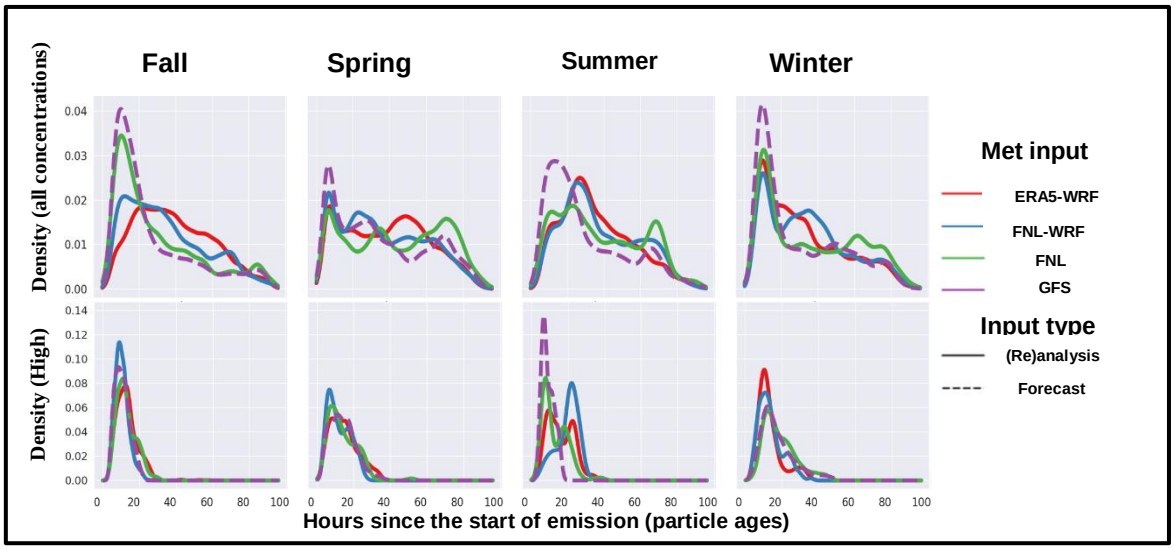


Figure S8 Same as Figure 2 but for ^{137}Cs concentrations.

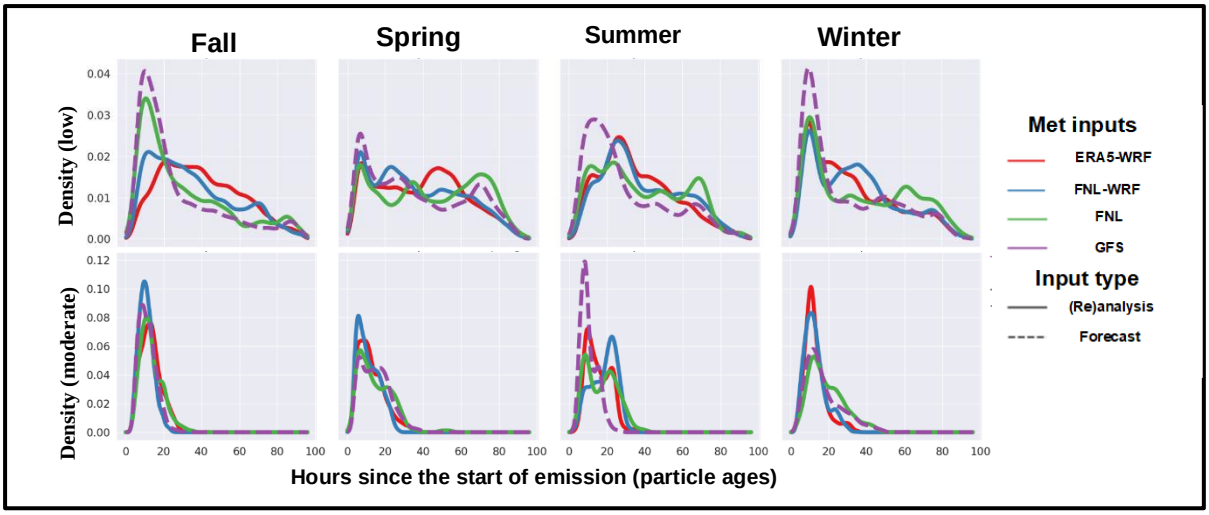


Figure S9 Same as Figure 2 but for the low and moderate concentrations of ^{131}I.

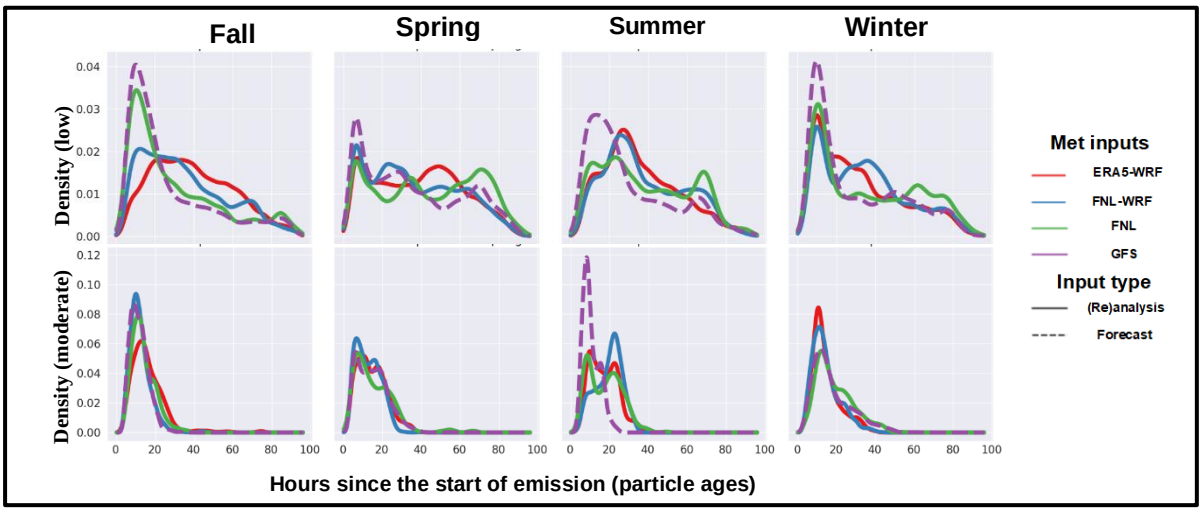


Figure S10 Same as Figure 2 but for the low and moderate concentrations of ^{137}Cs.

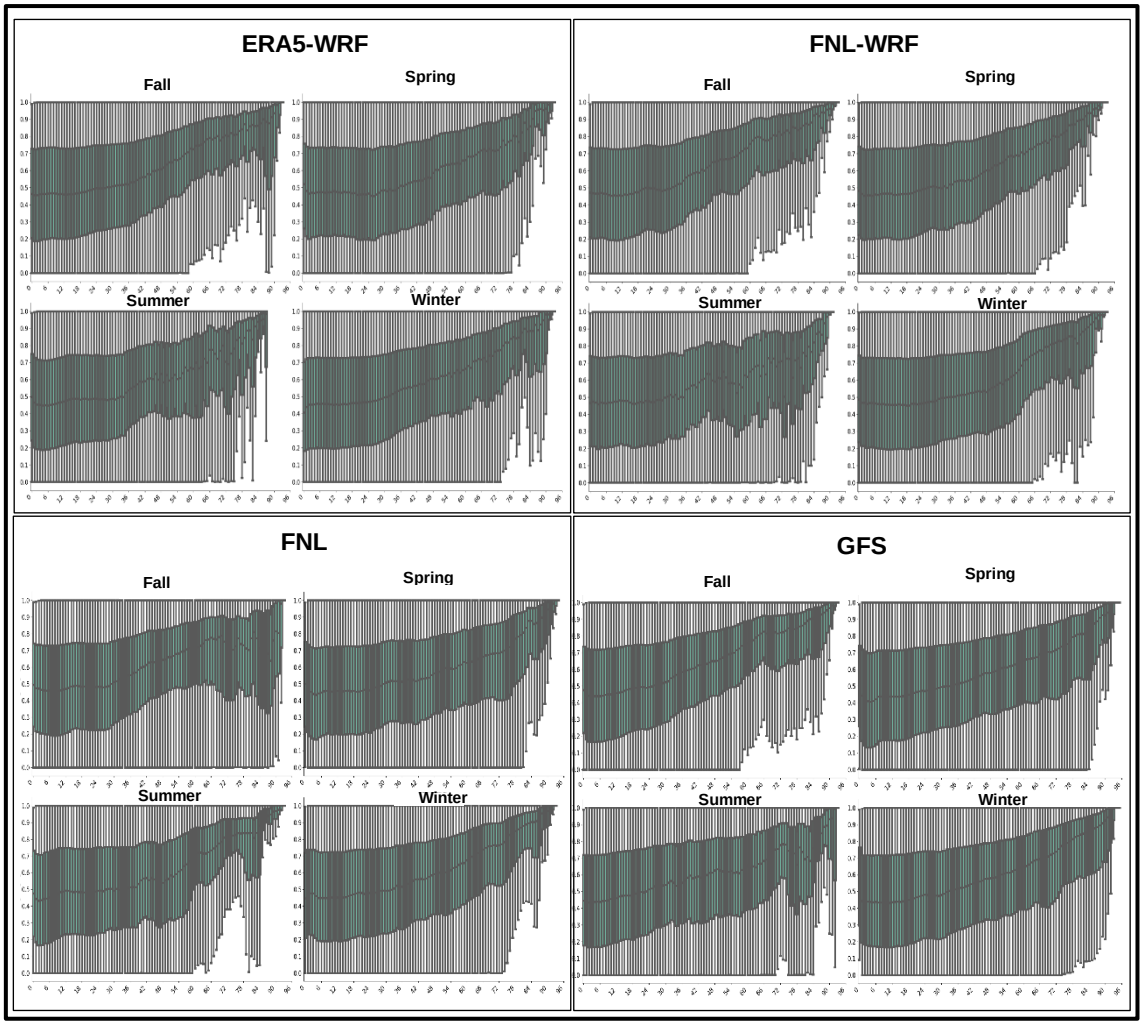


Figure S11 Same as Figure 4 but for all seasons.

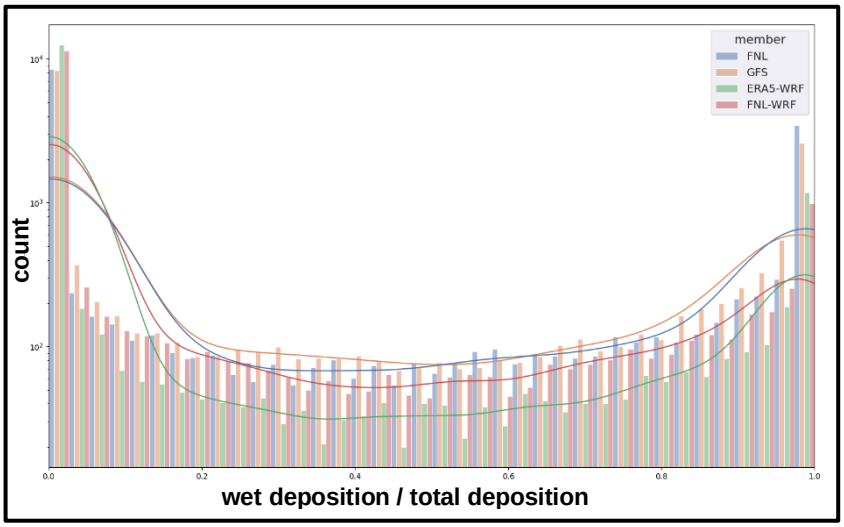


Figure S12 The distribution of the ratio of ^{137}Cs wet deposition to total ^{137}Cs deposition for each ensemble member (colors). The counts of the ratios are smoothed with a Gaussian kernel. The counts on the y-axis are on a logarithmic scale.

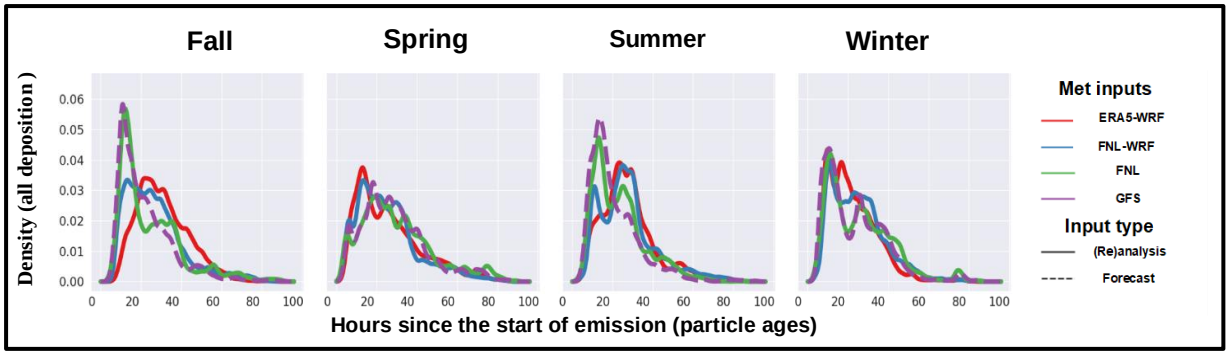
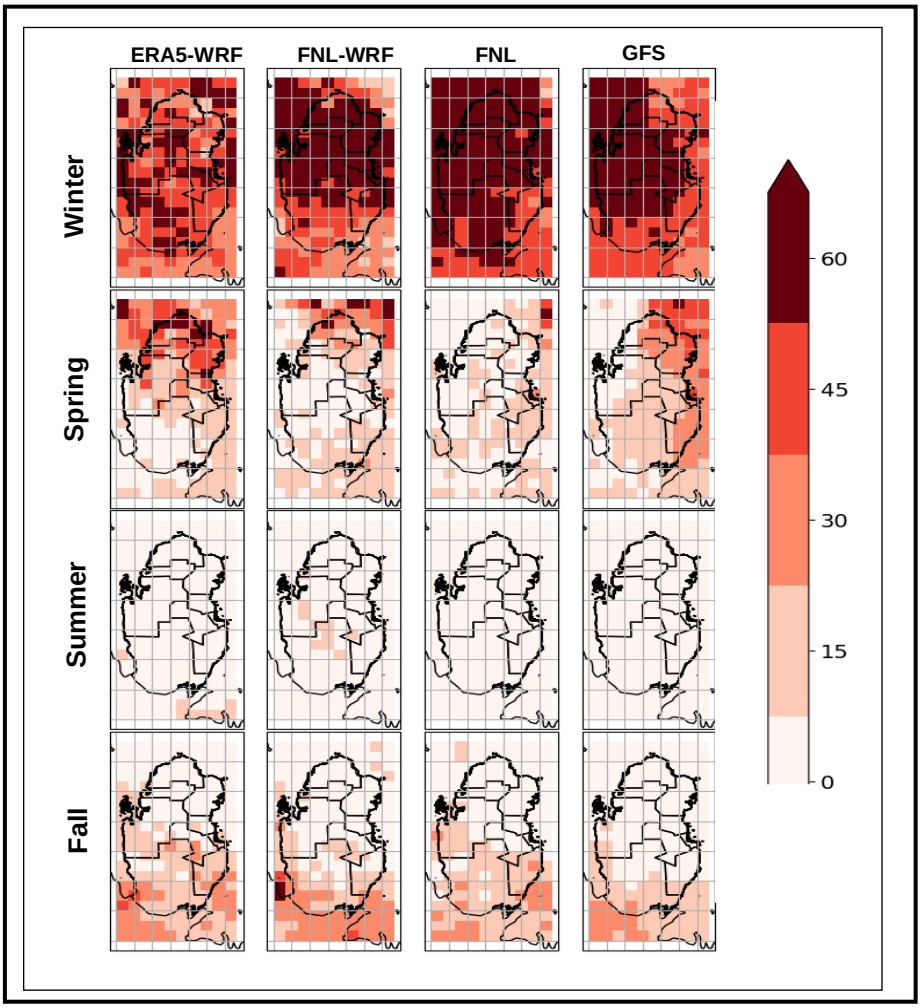
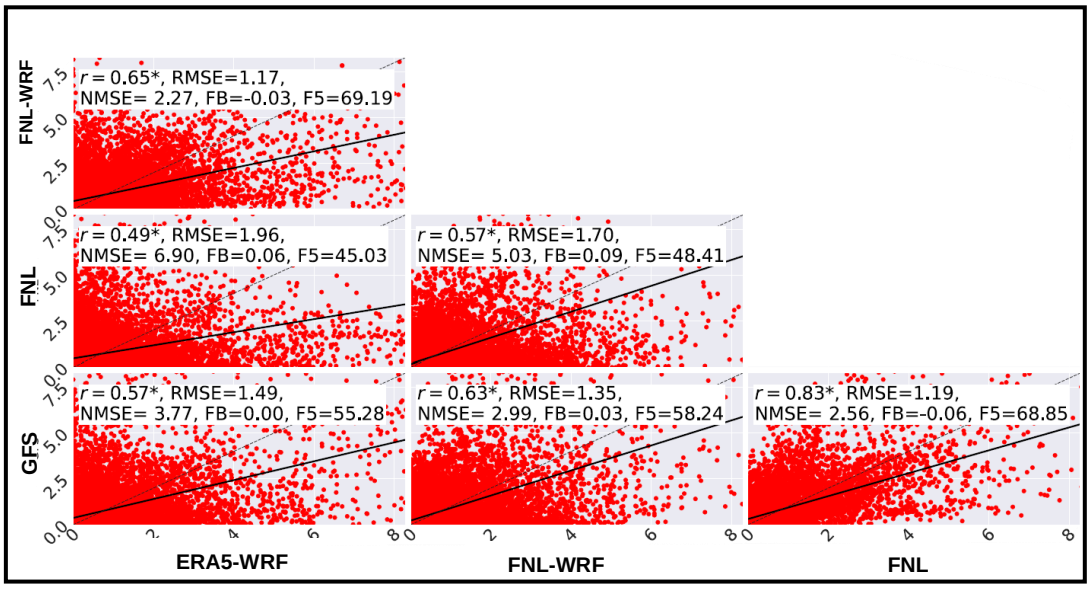


Figure S13 Same as the top panel of Figure 2, but for all ^{137}Cs depositions.



S14 Same as Figure 9-A but for ^{137}Cs concentrations above the respective 66th percentile.



S15 Same as Figure 13 but for ^{131}I dry depositions.

CHUNG, M. K. 2020. Gaussian kernel smoothing. *arXiv preprint arXiv:2007.09539*.

JIN, D. Z. & KOZHEVNIKOV, A. A. 2011. A compact statistical model of the song syntax in Bengalese finch. *PLoS computational biology,* 7**,** e1001108.