

Supplementary Material

Ensemble averaging allows modelling of spatiotemporal PM₁₀ concentrations in South Africa with sparse ground-based monitoring stations.

Oluwaseyi Olalekan Arowosegbe, Martin Rösli, Nino Künzli, Apolline Saucy, Temitope C Adebayo-Ojo, Joel Schwartz, Moses Kebalepile, Mohamed Fareed Jeebhay, Mohamed Aqiel Dalvie, Kees de Hoogh

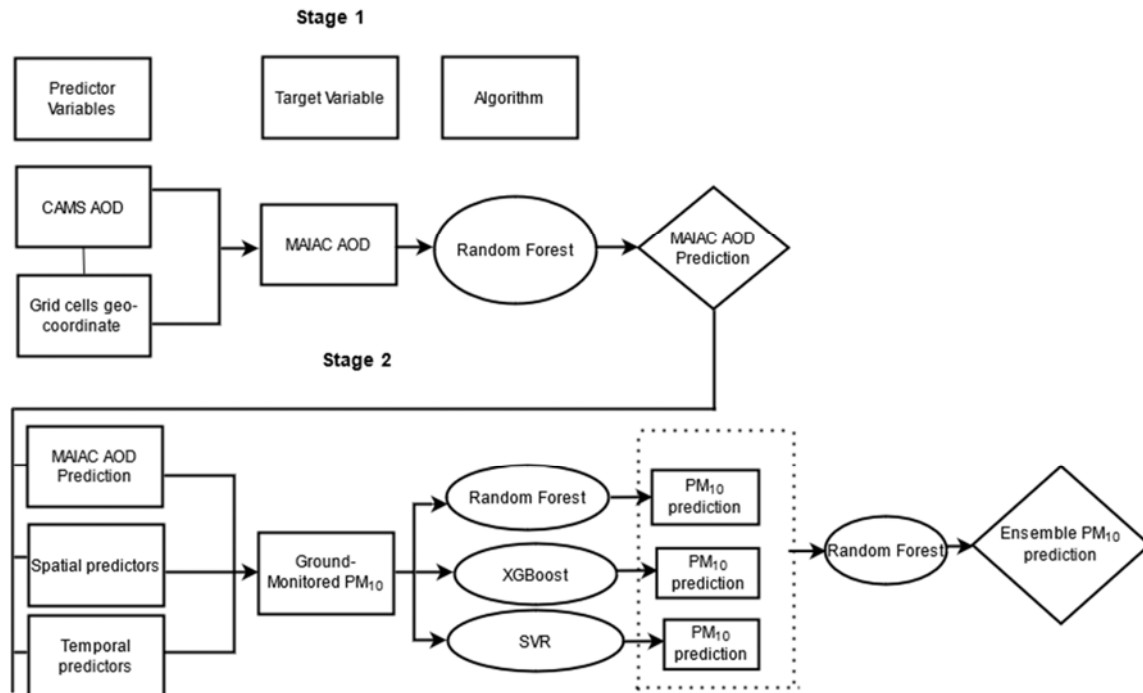


Figure S1. Flowchart of model training process.

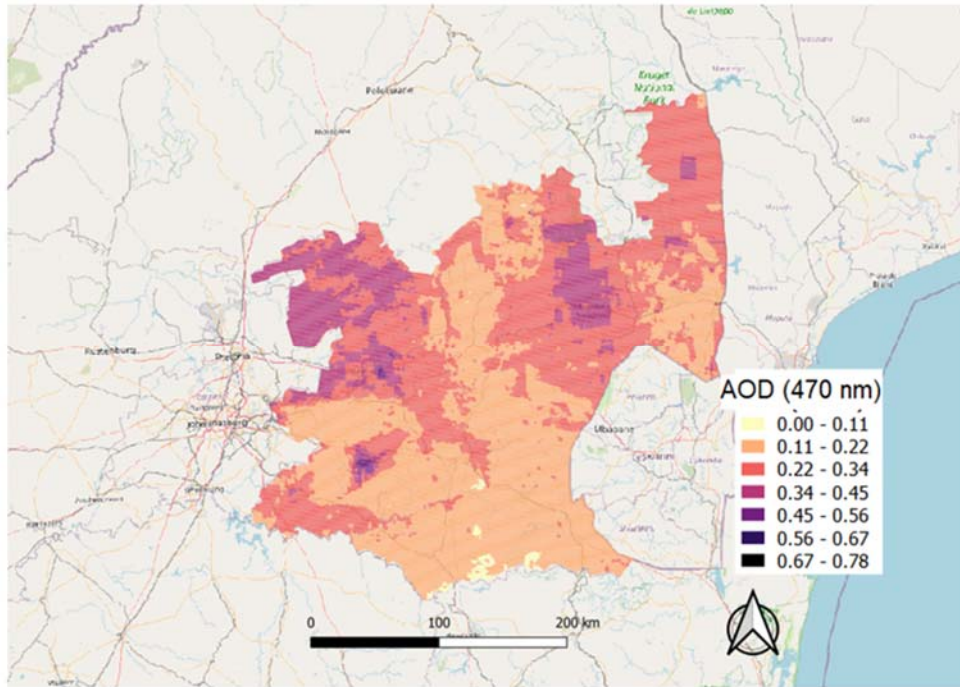


Figure S2: Mpumalanga province prediction map of AOD 470 nm for June 6, 2016

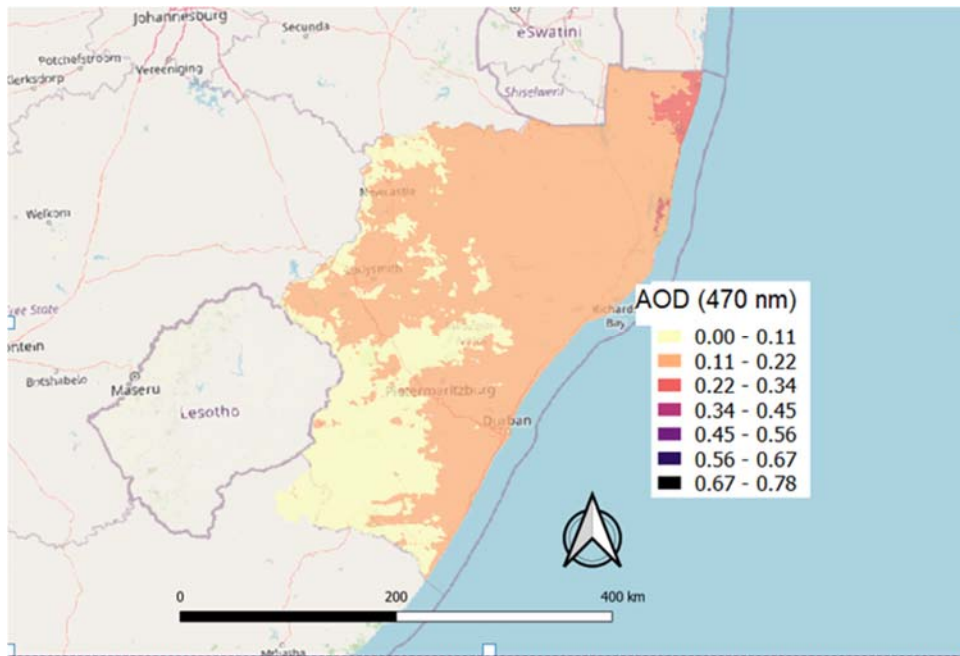


Figure S3: KwaZulu-Natal province prediction map of AOD 470 nm for June 6, 2016

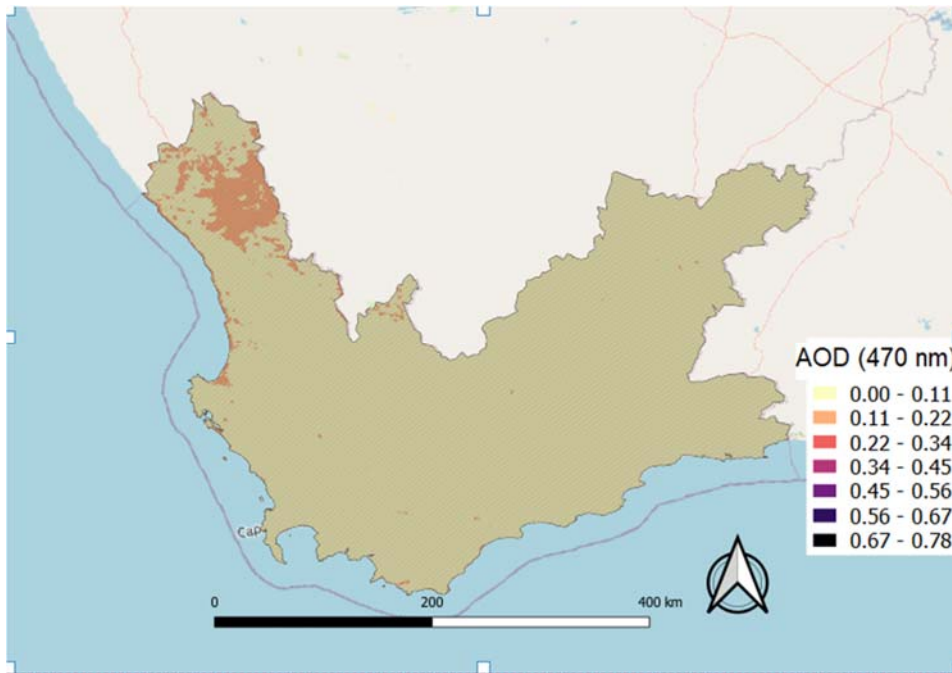


Figure S4: Western Cape Province prediction map of AOD 470 nm for June 6, 2016

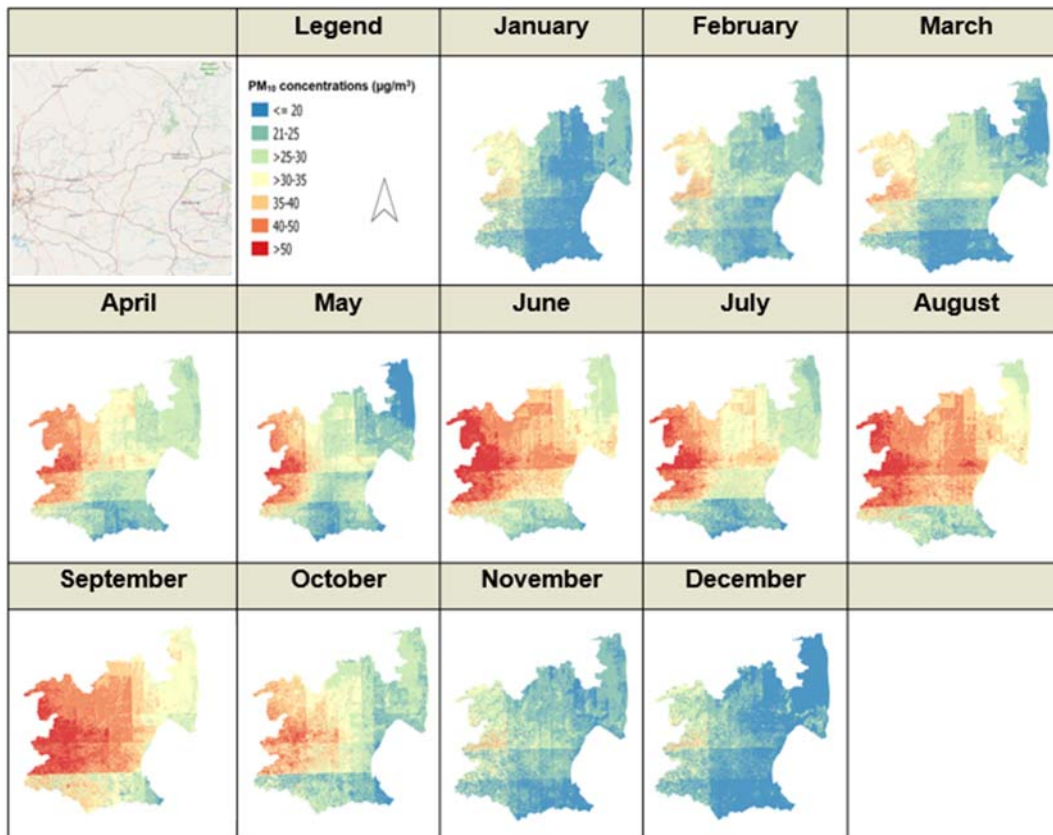


Figure S5: Mpumalanga Province estimated monthly mean PM₁₀ concentrations (µg/m³) for 2016 at 1 × 1 km grid cells aggregated from daily estimates.

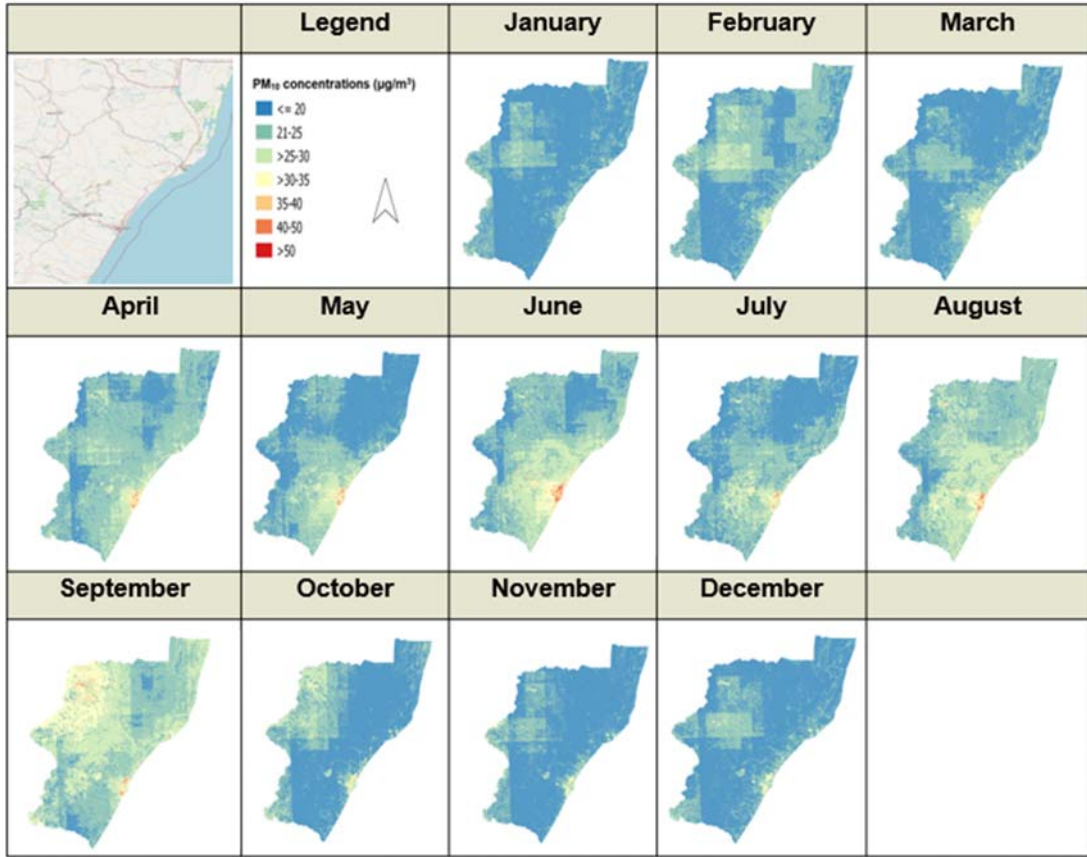


Figure S6: KwaZulu-Natal Province estimated monthly mean PM₁₀ concentrations (µg/m³) for 2016 at 1 × 1 km grid cells aggregated from daily estimates.

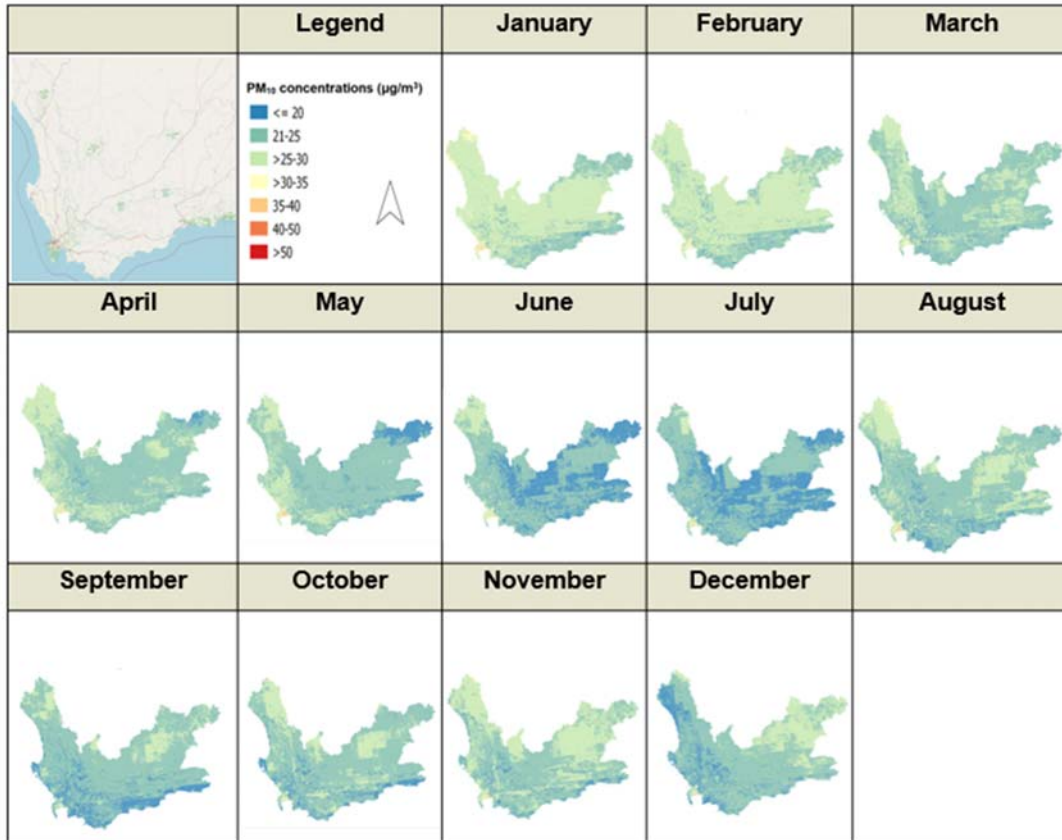


Figure S7: Western Cape Province estimated monthly mean PM₁₀ concentrations (µg/m³) for 2016 at 1 × 1 km grid cells aggregated from daily estimates.

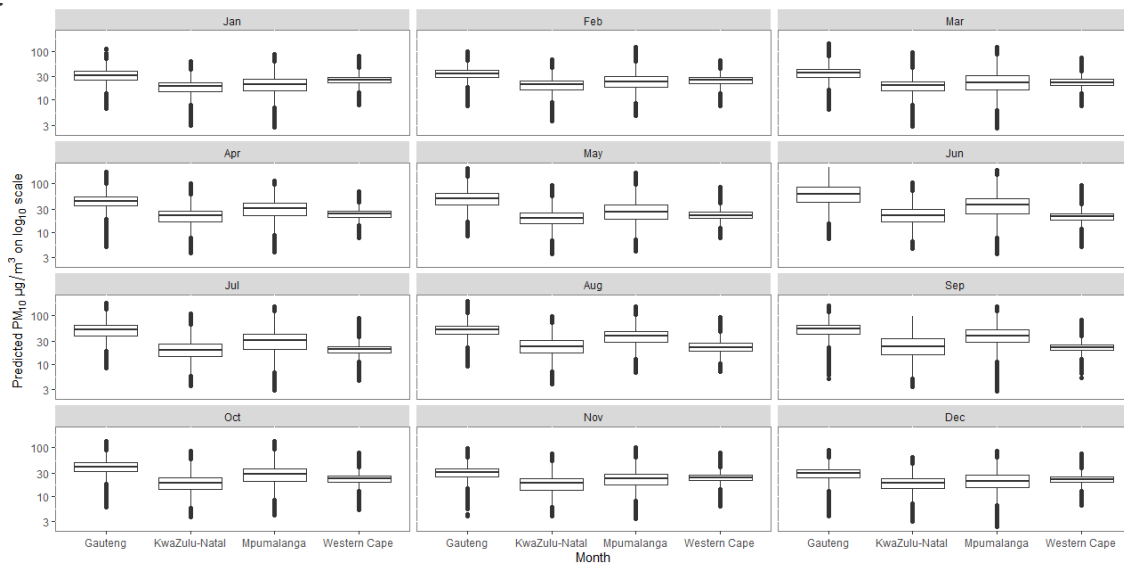


Figure S8: Spatial and temporal patterns in the distribution of predicted PM₁₀. The whisker limits indicate the P5 and P95 PM₁₀ concentrations.

Table S1: The percentage and distribution of observed MAIAC AOD 470 nm, unitless by month.

Month	N	Mean	SD	Percentiles				
				5	25	50	75	95
January	33871708 (72%)	0.12	0.09	0.02	0.06	0.09	0.15	0.29
February	33321263 (73%)	0.12	0.09	0.02	0.05	0.09	0.16	0.29
March	29172023 (62%)	0.11	0.08	0.02	0.05	0.08	0.13	0.26
April	31110663 (69%)	0.11	0.09	0.03	0.06	0.11	0.18	0.33
May	22186161 (51%)	0.12	0.08	0.03	0.07	0.12	0.19	0.35
June	19932993 (44%)	0.13	0.10	0.04	0.08	0.14	0.19	0.34
July	20323417 (43%)	0.12	0.07	0.04	0.09	0.15	0.21	0.36
August	23080918 (49%)	0.14	0.11	0.07	0.10	0.18	0.23	0.36
September	27713843 (59%)	0.15	0.12	0.08	0.11	0.19	0.25	0.40
October	30518734 (67%)	0.12	0.09	0.04	0.07	0.12	0.15	0.30
November	35335395 (75%)	0.11	0.08	0.03	0.06	0.08	0.15	0.28
December	37658476 (80%)	0.12	0.08	0.03	0.06	0.09	0.14	0.27