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Supplementary Materials

Table S1. Statistically highly significant ($p < 0.01$) results from the event-based regression analysis for MDA8 at site Neukölln (urban station #2) from 2000 to 2014. Thr: Threshold value for event detection, percentile: percentile of the threshold value for the whole study period, lag days: lag days included in regression, N events: average number of events per year, N event days: average number of event days per year, r^2 : explained variance, RE_{BR}: relative error of the base mortality rate, RE_{RC}: relative error of the regression coefficient (slope).

Thr ($\mu\text{g m}^{-3}$)	Percentile	Lag days	N events per year	N event days per year	r^2 (%)	RE _{BR} (%)	RE _{RC} (%)
75	≈ 69.	7	12.0	93.9	4.2	3.1	35.8
80	≈ 74.	0	10.9	75.3	9.0	3.0	25.1
85	≈ 78.	0	10.2	62.3	12.9	3.4	21.1
90	≈ 82.	0	8.9	50.1	15.8	3.3	20.1
95	≈ 85.	0	7.8	39.6	9.0	3.5	29.6
100	≈ 88.	0	5.7	29.5	19.1	4.7	22.4
105	≈ 90.	0	4.3	21.1	17.3	6.1	27.8
110	≈ 92.	0	3.1	15.2	28.8	9.9	23.4
115	≈ 94.	1	2.8	11.8	20.5	12.3	31.1
120	≈ 96.	3	2.1	8.3	28.2	27.3	29.6

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Table S2. As table S1, but for MDA8 at site Marienfelde (suburban station #1).

Thr ($\mu\text{g m}^{-3}$)	Percentile	Lag days	N events per year	N event days per year	r^2 (%)	RE _{BR} (%)	RE _{RC} (%)
95	≈ 80.	0	10.1	57.4	10.4	3.2	24.0
100	≈ 83.	0	7.9	42.4	13.5	3.7	23.5
105	≈ 87.	0	6.1	32.2	13.8	4.5	26.5
110	≈ 89.	0	4.9	24.7	16.7	5.4	26.5
115	≈ 91.	1	3.5	17.5	19.1	7.7	28.8
120	≈ 93.	1	2.8	12.9	25.6	7.9	26.9
125	≈ 95.	1	1.8	8.2	26.1	15.4	33.6

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1 **Table S3.** As table S1, but for MDA8 at site Grunewald (suburban station #2).

Thr ($\mu\text{g m}^{-3}$)	Percentile	Lag days	N events per year	N event days per year	r^2 (%)	RE _{BR} (%)	RE _{RC} (%)
85	≈ 78.	0	9.7	62.3	7.7	3.4	28.8
90	≈ 82.	0	8.5	49.9	7.8	3.4	30.7
95	≈ 85.	0	7.3	38.1	15.3	3.8	22.6
100	≈ 89.	0	5.7	28.3	14.4	4.3	26.7
110	≈ 93.	5	2.7	12.9	20.7	7.6	31.8
115	≈ 95.	5	2.1	9.6	35.2	9.0	25.2
120	≈ 96.	7	1.3	5.3	40.0	15.5	28.8
125	≈ 97.	6	1.1	3.9	43.0	41.4	30.8

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3 **Table S4.** As table S1, but for MDA8 at site Buch (suburban station #3).

Thr ($\mu\text{g m}^{-3}$)	Percentile	Lag days	N events per year	N event days per year	r^2 (%)	RE _{BR} (%)	RE _{RC} (%)
80	≈ 65.	2	13.5	102.3	3.3	2.0	38.1
85	≈ 71.	3	12.1	81.8	6.2	2.5	28.9
90	≈ 76.	7	10.5	65.5	6.7	4.1	29.9
95	≈ 81.	0	8.9	49.1	11.2	3.2	24.6
100	≈ 85.	2	7.0	36.6	16.5	3.4	22.1
115	≈ 93.	7	3.1	14.3	19.4	6.3	30.4
120	≈ 94.	7	2.0	9.2	32.1	6.2	27.5
125	≈ 96.	6	1.3	5.5	33.3	19.0	33.4

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5 **Table S5.** As table S1, but for MDA8 at site Friedrichshagen (suburban station #4).

Thr ($\mu\text{g m}^{-3}$)	Percentile	Lag days	N events per year	N event days per year	r^2 (%)	RE _{BR} (%)	RE _{RC} (%)
90	≈ 74	0	12.1	77.7	4.2	3.1	35.5
95	≈ 78	0	10.7	61.3	5.0	3.6	34.5
100	≈ 82	0	9.2	49.5	15.8	3.4	19.8
105	≈ 85	0	7.7	38.9	11.6	3.5	25.8
110	≈ 88	0	6.0	29.0	8.5	4.5	35.0

120	≈ 93	0	3.6	16.3	16.8	7.4	30.8
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Table S6. As table S1, but for MDA8 at site Frohnau (suburban station #5).

Thr ($\mu\text{g m}^{-3}$)	Percentile	Lag days	N events per year	N event days per year	r^2 (%)	RE _{BR} (%)	RE _{RC} (%)
85.	≈ 74	0	11.1	73.7	6.4	2.8	29.8
90.	≈ 79	0	9.9	57.2	7.3	3.3	29.4
95.	≈ 83	0	8.0	43.8	9.7	3.8	28.1
100	≈ 86	0	6.6	34.0	10.8	4.5	29.2
105	≈ 88	0	5.5	27.0	12.5	5.3	29.6
110	≈ 91	3	3.7	17.4	21.2	6.8	26.2
125	≈ 93	1	1.3	5.1	44.4	10.2	26.4
130	≈ 97	1	0.9	3.3	47.7	10.9	30.2
135	≈ 98	1	0.5	1.5	79.0	66.2	23.0

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