

C.5. Concentrations at each interface

C.5.1. Comparison of calculated values of PCB-180 concentration in the atmosphere at its interface with soil

Reference data set. Calculation results on PCB-180 concentration in the atmosphere at its interface with soil calculated by the models on the basis of “reference” data set together with statistical parameters used for evaluation are presented in Table C.90.

Monthly values of PCB-180 concentration in the atmosphere at its interface with soil calculated by all participating models on the basis of “reference” data set and taking into account non-zero (initial concentrations in media or historical emissions) and zero initial conditions are compared in Fig. C.111 a and b, respectively.

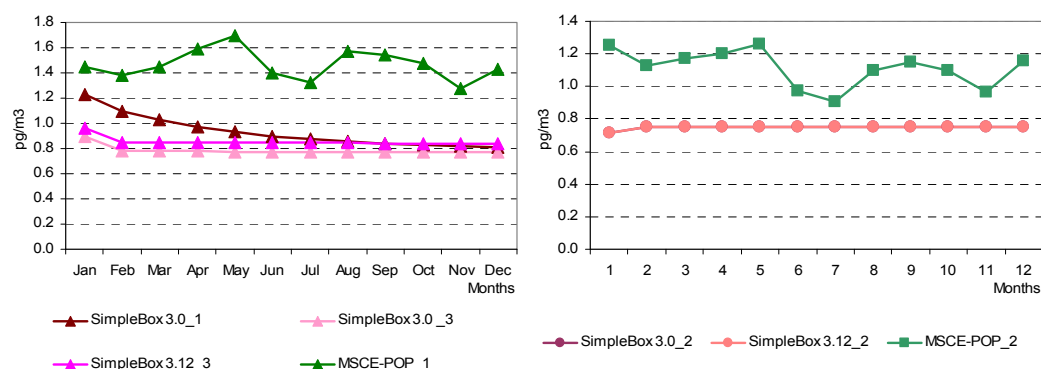


Fig. C.111a. PCB-180 concentration in the atmosphere at its interface with soil (pg/m³) calculated by the participating models on the basis of “reference” data set and non-zero initial conditions

Fig. C.111b. PCB-180 concentration in the atmosphere at its interface with soil (pg/m³) calculated by the participating models on the basis of “reference” data set and zero-initial conditions

Own/alternative data set. Calculation results on PCB-180 concentration in the atmosphere at its interface with soil calculated by models on the basis of “own or alternative” data sets together with statistical parameters used for evaluation are presented in Table C.91.

Monthly values of PCB-180 concentration in the atmosphere at its interface with soil calculated by all participating models on the basis of “own or alternative” data sets and taking into account non-zero (initial concentrations in media or historical emissions) and zero initial conditions are compared in Fig. C.112 a and b, respectively.

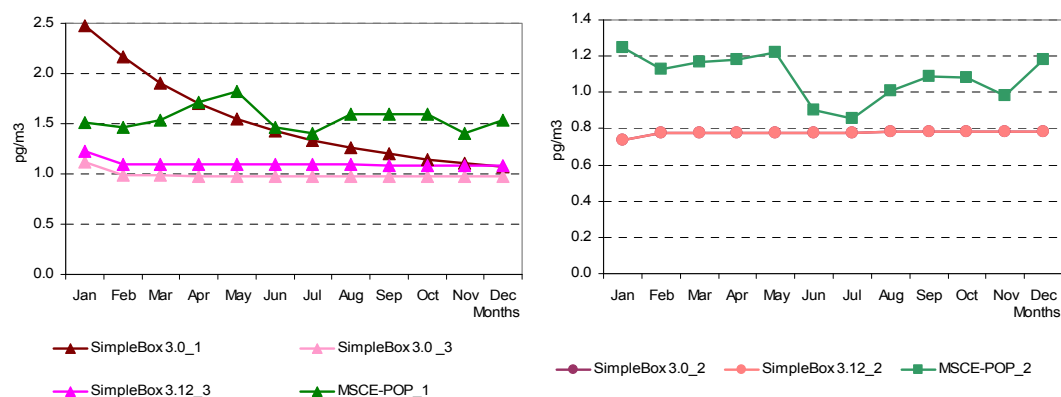


Fig. C.112a. PCB-180 concentration in the atmosphere at its interface with soil (pg/m³) calculated by the participating models on the basis of “own or alternative” data sets and non-zero initial conditions

Fig. C.112b. PCB-180 concentration in the atmosphere at its interface with soil (pg/m³) calculated by the participating models on the basis of “own or alternative” data sets and zero-initial conditions

Table C.90. Calculation results: PCB-180 concentration in the atmosphere at interface with soil (pg/m³) calculated by models on the basis of “reference” data set and statistical parameters used for evaluation

Month	Results obtained on the basis of initial concentrations given as input data		Results obtained on the basis of historical emissions		<i>m</i>	<i>σ</i>	Month	Results obtained on the basis of zero initial concentrations			<i>m</i>	<i>σ</i>
	SimpleBox 3.0_1	MSCE-POP_1	SimpleBox 3.0_3	SimpleBox 3.12_3				SimpleBox 3.0_2	SimpleBox 3.12_2	MSCE-POP_2		
Jan	1.23	1.45	0.90	0.96	1.14	0.25	Jan	0.71	0.71	1.25	0.89	0.31
Feb	1.10	1.38	0.78	0.85	1.03	0.27	Feb	0.75	0.75	1.13	0.88	0.22
Mar	1.02	1.45	0.78	0.85	1.02	0.30	Mar	0.75	0.75	1.17	0.89	0.24
Apr	0.97	1.59	0.78	0.85	1.05	0.37	Apr	0.75	0.75	1.20	0.90	0.26
May	0.93	1.70	0.78	0.84	1.06	0.43	May	0.75	0.75	1.26	0.92	0.29
Jun	0.90	1.40	0.78	0.84	0.98	0.28	Jun	0.75	0.75	0.97	0.82	0.13
Jul	0.87	1.32	0.78	0.84	0.95	0.25	Jul	0.75	0.75	0.91	0.80	0.09
Aug	0.86	1.57	0.77	0.84	1.01	0.37	Aug	0.75	0.75	1.10	0.87	0.20
Sep	0.84	1.54	0.77	0.84	1.00	0.36	Sep	0.75	0.75	1.15	0.89	0.23
Oct	0.83	1.48	0.77	0.84	0.98	0.33	Oct	0.75	0.75	1.10	0.87	0.20
Nov	0.82	1.28	0.77	0.84	0.93	0.24	Nov	0.75	0.75	0.97	0.82	0.12
Dec	0.81	1.43	0.77	0.84	0.96	0.31	Dec	0.75	0.75	1.16	0.89	0.24
Annual	0.93	1.49	0.79	0.85	1.01	0.32	Annual	0.75	0.75	1.12	0.87	0.22

MSCE-POP_1 - MSCE-POP results calculated on the basis of initial concentrations given as input data;

MSCE-POP_2 - MSCE-POP results calculated on the basis of zero initial concentrations;

SimpleBox 3.0_1 - SimpleBox results of version 3.0 calculated on the basis of initial concentrations given as input data;

SimpleBox 3.0_2 and SimpleBox 3.12_2 – SimpleBox results of versions 3.0 and 3.12, respectively, calculated on the basis of zero initial concentrations;

SimpleBox 3.0_3 and SimpleBox 3.12_3 – SimpleBox results of versions 3.0 and 3.12, respectively, calculated with historical emissions for 20-year period;

a – In SimpleBox results, the concentrations calculated are the bulk concentrations in the compartments. Total concentrations are averages of those over regional and continental cells.

Table C.91. Calculation results: PCB-180 concentration in the atmosphere at its interface with soil (pg/m³) calculated by models on the basis of “own or alternative” data sets and statistical parameters used for evaluation

Month	Results obtained on the basis of initial concentrations given as input data		Results obtained on the basis of historical emissions		<i>m</i>	<i>σ</i>	Month	Results obtained on the basis of zero initial concentrations			<i>m</i>	<i>σ</i>
	SimpleBox 3.0_1 ^a	MSCE-POP_1	SimpleBox 3.0_3 ^a	SimpleBox 3.12_3 ^a				SimpleBox 3.0_2 ^a	SimpleBox 3.12_2 ^a	MSCE-POP_2		
Jan	2.48	1.51	1.12	1.22	1.58	0.62	Jan	0.73	0.73	1.25	0.91	0.30
Feb	2.16	1.47	0.99	1.10	1.43	0.53	Feb	0.78	0.78	1.13	0.89	0.20
Mar	1.90	1.54	0.98	1.10	1.38	0.42	Mar	0.78	0.78	1.17	0.91	0.23
Apr	1.70	1.72	0.98	1.09	1.37	0.39	Apr	0.78	0.78	1.18	0.91	0.23
May	1.54	1.82	0.98	1.09	1.36	0.39	May	0.78	0.78	1.22	0.93	0.26
Jun	1.43	1.47	0.98	1.09	1.24	0.24	Jun	0.78	0.78	0.90	0.82	0.07
Jul	1.33	1.40	0.98	1.09	1.20	0.20	Jul	0.78	0.78	0.86	0.81	0.05
Aug	1.26	1.60	0.98	1.09	1.23	0.27	Aug	0.78	0.78	1.01	0.86	0.13
Sep	1.20	1.60	0.98	1.09	1.22	0.27	Sep	0.78	0.78	1.09	0.88	0.18
Oct	1.15	1.59	0.98	1.09	1.20	0.27	Oct	0.78	0.78	1.08	0.88	0.17
Nov	1.11	1.40	0.98	1.09	1.14	0.18	Nov	0.78	0.78	0.98	0.85	0.11
Dec	1.07	1.54	0.97	1.09	1.17	0.25	Dec	0.78	0.78	1.18	0.91	0.23
Annual	1.53	1.56	0.99	1.10	1.29	0.29	Annual	0.78	0.78	1.09	0.88	0.18

MSCE-POP_1 - MSCE-POP results calculated on the basis of initial concentrations given as input data;

MSCE-POP_2 - MSCE-POP results calculated on the basis of zero initial concentrations;

SimpleBox 3.0_1 - SimpleBox results of version 3.0 calculated on the basis of initial concentrations given as input data;

SimpleBox 3.0_2 and SimpleBox 3.12_2 – SimpleBox results of versions 3.0 and 3.12, respectively, calculated on the basis of zero initial concentrations;

SimpleBox 3.0_3 and SimpleBox 3.12_3 – SimpleBox results of versions 3.0 and 3.12, respectively, calculated with historical emissions for 20-year period;

a – In SimpleBox results, the concentrations calculated are the bulk concentrations in the compartments. Total concentrations are averages of those over regional and continental cells.

Comparison between results obtained on the basis of two data sets. The percentage difference between calculation results obtained with two data sets of physical-chemical properties (for those models who provided calculations for both these sets) is shown in Table C.92.

Table C.92. The percentage difference between calculation results on PCB-180 concentration in the atmosphere at its interface with soil obtained by models on the basis of two data sets: “reference” and “own or alternative” data sets

Month	SimpleBox 3.0_1	SimpleBox 3.0_2	SimpleBox 3.12_2	SimpleBox 3.0_3	SimpleBox 3.12_3	MSCE-POP_1	MSCE-POP_2
Jan	101.3%	2.9%	2.9%	24.4%	26.8%	4.1%	0.0%
Feb	97.2%	3.2%	3.2%	26.8%	29.5%	6.5%	0.0%
Mar	85.6%	3.3%	3.3%	26.6%	29.4%	6.2%	0.0%
Apr	75.2%	3.4%	3.4%	26.5%	29.4%	8.2%	-1.7%
May	66.3%	3.5%	3.5%	26.4%	29.3%	7.1%	-3.2%
Jun	58.8%	3.5%	3.5%	26.3%	29.3%	5.0%	-6.8%
Jul	52.4%	3.6%	3.6%	26.2%	29.3%	6.1%	-5.1%
Aug	47.0%	3.6%	3.6%	26.2%	29.3%	1.9%	-8.2%
Sep	42.4%	3.7%	3.6%	26.1%	29.2%	3.9%	-5.2%
Oct	38.5%	3.7%	3.7%	26.0%	29.2%	7.4%	-1.8%
Nov	35.1%	3.7%	3.7%	26.0%	29.2%	9.4%	1.3%
Dec	32.2%	3.7%	3.7%	25.9%	29.2%	7.7%	1.7%
Annual	64.0%	3.5%	3.5%	26.1%	29.1%	4.5%	-3.2%

MSCE-POP_1 - MSCE-POP results calculated on the basis of initial concentrations given as input data;

MSCE-POP_2 - MSCE-POP results calculated on the basis of zero initial concentrations;

SimpleBox 3.0_1 - SimpleBox results of version 3.0 calculated on the basis of initial concentrations given as input data;

SimpleBox 3.0_2 and SimpleBox 3.12_2 – SimpleBox results of versions 3.0 and 3.12, respectively, calculated on the basis of zero initial concentrations;

SimpleBox 3.0_3 and SimpleBox 3.12_3 – SimpleBox results of versions 3.0 and 3.12, respectively, calculated with historical emissions for 20-year period.

C.5.2. Comparison of calculated values of PCB-180 concentration in the atmosphere at its interface with ocean

Reference data set. Calculation results on PCB-180 concentration in the atmosphere at its interface with ocean calculated by the models on the basis of “reference” data set together with statistical parameters used for evaluation are presented in Table C.93.

Monthly values of PCB-180 concentration in the atmosphere at its interface with ocean calculated by participating models on the basis of “reference” data set and taking into account non-zero (initial concentrations in media or historical emissions) and zero initial conditions are compared in Fig. C.113 a and b, respectively.

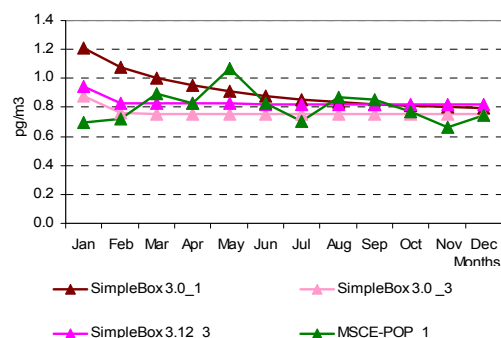


Fig. C.113a. PCB-180 concentration in the atmosphere at interface with ocean (pg/m³) calculated by the participating models on the basis of “reference” data set and non-zero initial conditions

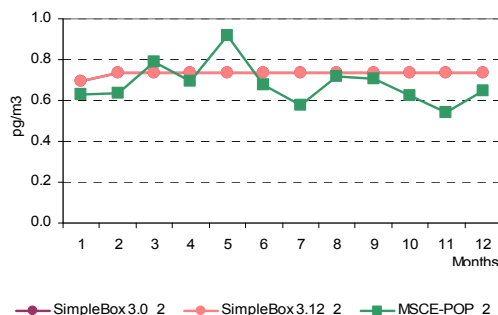


Fig. C.113b. PCB-180 concentration in the atmosphere at interface with ocean (pg/m³) calculated by the participating models on the basis of “reference” data set and zero-initial conditions

Own/alternative data set. Calculation results on PCB-180 concentration in the atmosphere at its interface with ocean calculated by models on the basis of “own or alternative” data sets together with statistical parameters used for evaluation are presented in Table C.94.

Monthly values of PCB-180 concentration in the atmosphere at its interface with ocean calculated by all participating models on the basis of “own or alternative” data sets and taking into account non-zero (initial concentrations in media or historical emissions) and zero initial conditions are compared in Fig. C.114 a and b, respectively.

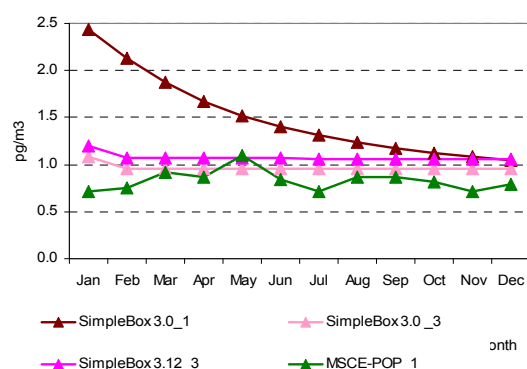


Fig. C.114a. PCB-180 concentration in the atmosphere at interface with ocean (pg/m³) calculated by the participating models on the basis of “own or alternative” data sets and non-zero initial conditions

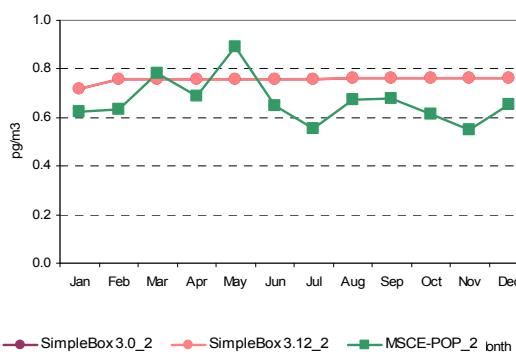


Fig. C.114b. PCB-180 concentration in the atmosphere at interface with ocean (pg/m³) calculated by the participating models on the basis of “own or alternative” data sets and zero-initial conditions

Table C.93. Calculation results: PCB-180 concentration in the atmosphere at its interface with ocean (pg/m^3) calculated by models on the basis of “reference” data set and statistical parameters used for evaluation

Month	Results obtained on the basis of initial concentrations given as input data		Results obtained on the basis of historical emissions		m	σ	Month	Results obtained on the basis of zero initial concentrations			m	σ
	SimpleBox 3.0_1 ^a	MSCE-POP_1	SimpleBox 3.0_3 ^a	SimpleBox 3.12_3 ^a				SimpleBox 3.0_2 ^a	SimpleBox 3.12_2 ^a	MSCE-POP_2		
Jan	1.21	0.70	0.88	0.94	0.93	0.21	Jan	0.70	0.70	0.63	0.67	0.04
Feb	1.07	0.72	0.76	0.83	0.85	0.16	Feb	0.73	0.73	0.64	0.70	0.05
Mar	1.00	0.89	0.76	0.83	0.87	0.10	Mar	0.73	0.73	0.79	0.75	0.03
Apr	0.95	0.83	0.76	0.83	0.84	0.08	Apr	0.73	0.73	0.70	0.72	0.02
May	0.91	1.07	0.76	0.82	0.89	0.14	May	0.73	0.73	0.92	0.79	0.11
Jun	0.88	0.83	0.76	0.82	0.82	0.05	Jun	0.73	0.73	0.68	0.71	0.03
Jul	0.85	0.71	0.76	0.82	0.78	0.07	Jul	0.73	0.73	0.58	0.68	0.09
Aug	0.84	0.87	0.76	0.82	0.82	0.05	Aug	0.73	0.73	0.72	0.73	0.01
Sep	0.82	0.85	0.76	0.82	0.81	0.04	Sep	0.73	0.73	0.70	0.72	0.02
Oct	0.81	0.77	0.76	0.82	0.79	0.03	Oct	0.73	0.73	0.62	0.70	0.06
Nov	0.80	0.67	0.75	0.82	0.76	0.07	Nov	0.73	0.73	0.54	0.67	0.11
Dec	0.79	0.74	0.75	0.82	0.78	0.04	Dec	0.73	0.73	0.65	0.70	0.05
Annual	0.91	0.82	0.77	0.83	0.83	0.06	Annual	0.73	0.73	0.70	0.72	0.02

MSCE-POP_1 - MSCE-POP results calculated on the basis of initial concentrations given as input data;

MSCE-POP_2 - MSCE-POP results calculated on the basis of zero initial concentrations;

SimpleBox 3.0_1 - SimpleBox results of version 3.0 calculated on the basis of initial concentrations given as input data;

SimpleBox 3.0_2 and SimpleBox 3.12_2 – SimpleBox results of versions 3.0 and 3.12, respectively, calculated on the basis of zero initial concentrations;

SimpleBox 3.0_3 and SimpleBox 3.12_3 – SimpleBox results of versions 3.0 and 3.12, respectively, calculated with historical emissions for 20-year period;

a – In SimpleBox results, the concentrations calculated are the bulk concentrations in the compartments. Total concentrations are averages of those over regional and continental cells.

Table C.94. Calculation results: PCB-180 concentration in the atmosphere at its interface with ocean (pg/m3) calculated by models on the basis of “own or alternative” data sets and statistical parameters used for evaluation

Month	Results obtained on the basis of initial concentrations given as input data		Results obtained on the basis of historical emissions		<i>m</i>	σ	Month	Results obtained on the basis of zero initial concentrations			<i>m</i>	σ
	SimpleBox 3.0_1 ^a	MSCE-POP_1	SimpleBox 3.0_3 ^a	SimpleBox 3.12_3 ^a				SimpleBox 3.0_2 ^a	SimpleBox 3.12_2 ^a	MSCE-POP_2		
Jan	2.44	0.72	1.09	1.19	1.36	0.75	Jan	0.72	0.72	0.63	0.69	0.05
Feb	2.13	0.75	0.96	1.07	1.23	0.62	Feb	0.76	0.76	0.64	0.72	0.07
Mar	1.87	0.92	0.96	1.07	1.21	0.45	Mar	0.76	0.76	0.78	0.77	0.01
Apr	1.67	0.86	0.96	1.07	1.14	0.36	Apr	0.76	0.76	0.69	0.74	0.04
May	1.52	1.10	0.96	1.07	1.16	0.25	May	0.76	0.76	0.89	0.80	0.08
Jun	1.40	0.84	0.96	1.07	1.07	0.24	Jun	0.76	0.76	0.65	0.72	0.06
Jul	1.31	0.72	0.95	1.06	1.01	0.24	Jul	0.76	0.76	0.55	0.69	0.12
Aug	1.23	0.87	0.95	1.06	1.03	0.16	Aug	0.76	0.76	0.68	0.73	0.05
Sep	1.18	0.87	0.95	1.06	1.02	0.13	Sep	0.76	0.76	0.68	0.73	0.05
Oct	1.13	0.81	0.95	1.06	0.99	0.14	Oct	0.76	0.76	0.62	0.71	0.08
Nov	1.09	0.72	0.95	1.06	0.95	0.17	Nov	0.76	0.76	0.55	0.69	0.12
Dec	1.05	0.79	0.95	1.06	0.96	0.13	Dec	0.76	0.76	0.65	0.73	0.06
Annual	1.50	0.83	0.97	1.08	1.09	0.29	Annual	0.76	0.76	0.67	0.73	0.05

MSCE-POP_1 - MSCE-POP results calculated on the basis of initial concentrations given as input data;

MSCE-POP_2 - MSCE-POP results calculated on the basis of zero initial concentrations;

SimpleBox 3.0_1 - SimpleBox results of version 3.0 calculated on the basis of initial concentrations given as input data;

SimpleBox 3.0_2 and SimpleBox 3.12_2 – SimpleBox results of versions 3.0 and 3.12, respectively, calculated on the basis of zero initial concentrations;

a – In SimpleBox results, the concentrations calculated are the bulk concentrations in the compartments. Total concentrations are averages of those over regional and continental cells.

Comparison between results obtained on the basis of two data sets. The percentage difference between calculation results obtained with two data sets of physical-chemical properties (for those models who provided calculations for both these sets) is shown in Table C.95.

Table C.95. The percentage difference between calculation results on PCB-180 concentration in the atmosphere at its interface with ocean obtained by models on the basis of two data sets: “reference” and “own or alternative” data sets

Month	SimpleBox 3.0_1	SimpleBox 3.0_2	SimpleBox 3.12_2	SimpleBox 3.0_3	SimpleBox 3.12_3	MSCE- POP_1	MSCE- POP_2
Jan	102.0%	2.9%	2.9%	24.4%	26.7%	3.2%	-0.3%
Feb	98.1%	3.2%	3.2%	26.9%	29.5%	3.5%	-0.5%
Mar	86.4%	3.4%	3.4%	26.7%	29.4%	3.4%	-0.6%
Apr	76.0%	3.4%	3.4%	26.6%	29.4%	4.3%	-1.0%
May	67.1%	3.5%	3.5%	26.5%	29.3%	2.8%	-2.7%
Jun	59.6%	3.6%	3.6%	26.4%	29.3%	1.8%	-4.3%
Jul	53.2%	3.6%	3.6%	26.3%	29.2%	2.0%	-4.2%
Aug	47.7%	3.6%	3.6%	26.3%	29.2%	0.1%	-5.6%
Sep	43.1%	3.7%	3.7%	26.2%	29.2%	2.4%	-3.4%
Oct	39.1%	3.7%	3.7%	26.1%	29.2%	5.3%	-1.1%
Nov	35.7%	3.7%	3.7%	26.1%	29.2%	7.5%	1.1%
Dec	32.8%	3.8%	3.8%	26.0%	29.2%	5.6%	1.2%
Annual	64.7%	3.5%	3.5%	26.2%	29.0%	0.9%	-4.3%

MSCE-POP_1 - MSCE-POP results calculated on the basis of initial concentrations given as input data;;

MSCE-POP_2 - MSCE-POP results calculated on the basis of zero initial concentrations;

SimpleBox 3.0_1 - SimpleBox results of version 3.0 calculated on the basis of initial concentrations given as input data;

SimpleBox 3.0_2 and SimpleBox 3.12_2 – SimpleBox results of versions 3.0 and 3.12, respectively, calculated on the basis of zero initial concentrations;

SimpleBox 3.0_3 and SimpleBox 3.12_3 – SimpleBox results of versions 3.0 and 3.12, respectively, calculated with historical emissions for 20-year period.

C.5.3. Comparison of calculated values of PCB-180 concentration in the atmosphere at its interface with vegetation

Reference data set. Calculation results on PCB-180 concentration in the atmosphere at its interface with vegetation calculated by the models on the basis of “reference” data set together with statistical parameters used for evaluation are presented in Table C.96.

Monthly values of PCB-180 concentration in the atmosphere at its interface with vegetation calculated by participating models on the basis of “reference” data set and taking into account non-zero (initial concentrations in media or historical emissions) and zero initial conditions are compared in Fig. C.115 a and b, respectively.

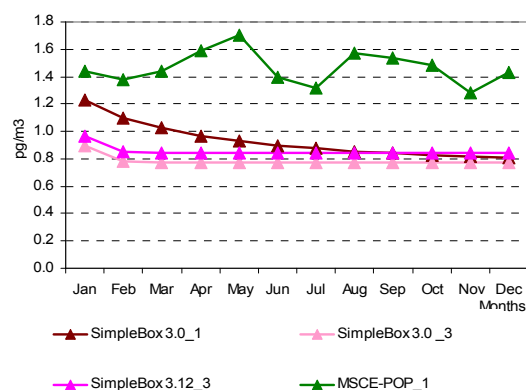


Fig. C.115a. PCB-180 concentration in the atmosphere at interface with vegetation (pg/m³) calculated by the participating models on the basis of “reference” data set and non-zero initial conditions

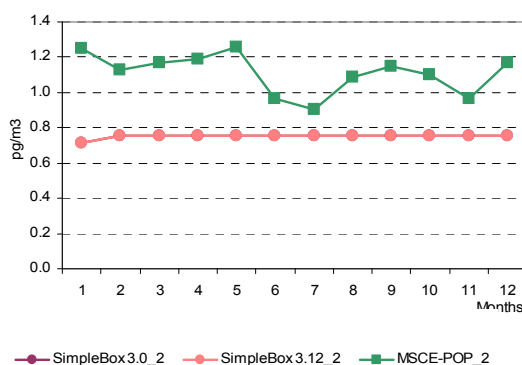


Fig. C.115b. PCB-180 concentration in the atmosphere at interface with vegetation (pg/m³) calculated by the participating models on the basis of “reference” data set and zero-initial conditions

Own/alternative data set. Calculation results on PCB-180 concentration in the atmosphere at its interface with vegetation calculated by models on the basis of “own or alternative” data sets together with statistical parameters used for evaluation are presented in Table C.97.

Monthly values of PCB-180 concentration in the atmosphere at its interface with vegetation calculated by all participating models on the basis of “own or alternative” data sets and taking into account non-zero (initial concentrations in media or historical emissions) and zero initial conditions are compared in Fig. C.116 a and b, respectively.

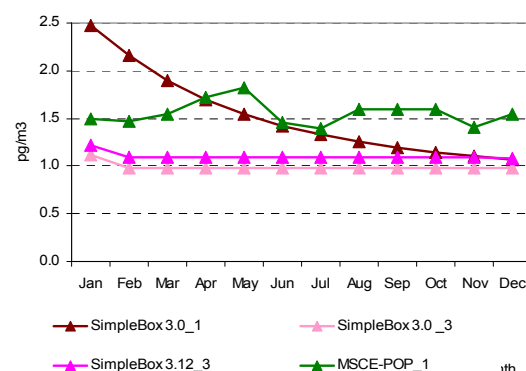


Fig. C.116a. PCB-180 concentration in the atmosphere at interface with vegetation (pg/m³) calculated by the participating models on the basis of “own or alternative” data sets and non-zero initial conditions

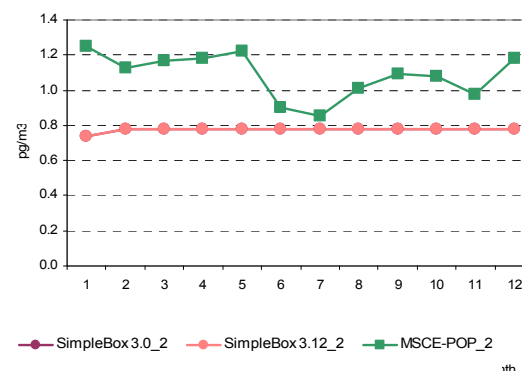


Fig. C.116b. PCB-180 concentration in the atmosphere at interface with vegetation (pg/m³) calculated by the participating models on the basis of “own or alternative” data sets and zero-initial conditions

Table C.96. Calculation results: PCB-180 concentration in the atmosphere at its interface with vegetation (pg/m^3) calculated by models on the basis of “reference” data set and statistical parameters used for evaluation

Month	Results obtained on the basis of initial concentrations given as input data		Results obtained on the basis of historical emissions		m	σ	Month	Results obtained on the basis of zero initial concentrations			m	σ
	SimpleBox 3.0_1 ^a	MSCE- POP_1	SimpleBox 3.0_3 ^a	SimpleBox 3.12_3 ^a				SimpleBox 3.0_2 ^a	SimpleBox 3.12_2 ^a	MSCE-POP_2		
Jan	1.23	1.44	0.90	0.96	1.13	0.25	Jan	0.71	0.71	1.25	0.89	0.31
Feb	1.10	1.38	0.78	0.85	1.03	0.27	Feb	0.75	0.75	1.13	0.88	0.22
Mar	1.02	1.44	0.78	0.85	1.02	0.30	Mar	0.75	0.75	1.17	0.89	0.24
Apr	0.97	1.59	0.78	0.85	1.05	0.37	Apr	0.75	0.75	1.19	0.90	0.25
May	0.93	1.70	0.78	0.84	1.06	0.43	May	0.75	0.75	1.26	0.92	0.29
Jun	0.90	1.40	0.78	0.84	0.98	0.28	Jun	0.75	0.75	0.97	0.82	0.12
Jul	0.87	1.32	0.78	0.84	0.95	0.25	Jul	0.75	0.75	0.90	0.80	0.09
Aug	0.86	1.57	0.77	0.84	1.01	0.37	Aug	0.75	0.75	1.09	0.87	0.19
Sep	0.84	1.54	0.77	0.84	1.00	0.36	Sep	0.75	0.75	1.15	0.89	0.23
Oct	0.83	1.48	0.77	0.84	0.98	0.33	Oct	0.75	0.75	1.10	0.87	0.20
Nov	0.82	1.28	0.77	0.84	0.93	0.24	Nov	0.75	0.75	0.97	0.82	0.12
Dec	0.81	1.43	0.77	0.84	0.96	0.31	Dec	0.75	0.75	1.17	0.89	0.24
Annual	0.93	1.49	0.79	0.85	1.01	0.32	Annual	0.75	0.75	1.12	0.87	0.21

MSCE-POP_1 - MSCE-POP results calculated on the basis of initial concentrations given as input data;

MSCE-POP_2 - MSCE-POP results calculated on the basis of zero initial concentrations;

SimpleBox 3.0_1 - SimpleBox results of version 3.0 calculated on the basis of initial concentrations given as input data;

SimpleBox 3.0_2 and SimpleBox 3.12_2 – SimpleBox results of versions 3.0 and 3.12, respectively, calculated on the basis of zero initial concentrations;

SimpleBox 3.0_3 and SimpleBox 3.12_3 – SimpleBox results of versions 3.0 and 3.12, respectively, calculated with historical emissions for 20-year period;

a – In SimpleBox results, the concentrations calculated are the bulk concentrations in the compartments. Total concentrations are averages of those over regional and continental cells.

Table C.97. Calculation results: PCB-180 concentration in the atmosphere at its interface with vegetation (pg/m^3) calculated by models on the basis of “own or alternative” data sets and statistical parameters used for evaluation.

Month	Results obtained on the basis of initial concentrations given as input data		Results obtained on the basis of historical emissions		m	σ	Month	Results obtained on the basis of zero initial concentrations			m	σ
	SimpleBox 3.0 1 ^a	MSCE-POP 1	SimpleBox 3.0 3 ^a	SimpleBox 3.12 3 ^a				SimpleBox 3.0 2 ^a	SimpleBox 3.12 2 ^a	MSCE-POP 2		
Jan	2.48	1.50	1.12	1.22	1.58	0.62	Jan	0.73	0.73	1.25	0.91	0.30
Feb	2.16	1.47	0.99	1.10	1.43	0.53	Feb	0.78	0.78	1.13	0.89	0.20
Mar	1.90	1.54	0.98	1.10	1.38	0.42	Mar	0.78	0.78	1.17	0.91	0.23
Apr	1.70	1.72	0.98	1.09	1.37	0.39	Apr	0.78	0.78	1.18	0.91	0.23
May	1.54	1.82	0.98	1.09	1.36	0.39	May	0.78	0.78	1.22	0.93	0.26
Jun	1.43	1.46	0.98	1.09	1.24	0.24	Jun	0.78	0.78	0.90	0.82	0.07
Jul	1.33	1.40	0.98	1.09	1.20	0.20	Jul	0.78	0.78	0.86	0.80	0.04
Aug	1.26	1.60	0.98	1.09	1.23	0.27	Aug	0.78	0.78	1.01	0.86	0.13
Sep	1.20	1.60	0.98	1.09	1.22	0.27	Sep	0.78	0.78	1.09	0.88	0.18
Oct	1.15	1.59	0.98	1.09	1.20	0.27	Oct	0.78	0.78	1.08	0.88	0.17
Nov	1.11	1.41	0.98	1.09	1.14	0.19	Nov	0.78	0.78	0.98	0.85	0.12
Dec	1.07	1.54	0.97	1.09	1.17	0.25	Dec	0.78	0.78	1.18	0.91	0.23
Annual	1.53	1.55	0.99	1.10	1.29	0.29	Annual	0.78	0.78	1.09	0.88	0.18

MSCE-POP_1 - MSCE-POP results calculated on the basis of initial concentrations given as input data;

MSCE-POP_2 - MSCE-POP results calculated on the basis of zero initial concentrations;

SimpleBox 3.0_1 - SimpleBox results of version 3.0 calculated on the basis of initial concentrations given as input data;

SimpleBox 3.0_2 and SimpleBox 3.12_2 – SimpleBox results of versions 3.0 and 3.12, respectively, calculated on the basis of zero initial concentrations;

SimpleBox 3.0_3 and SimpleBox 3.12_3 – SimpleBox results of versions 3.0 and 3.12, respectively, calculated with historical emissions for 20-year period;

a – In SimpleBox results, the concentrations calculated are the bulk concentrations in the compartments. Total concentrations are averages of those over regional and continental cells.

Comparison between results obtained on the basis of two data sets. The percentage difference between calculation results obtained with two data sets of physical-chemical properties (for those models who provided calculations for both these sets) is shown in Table C.98.

Table C.98. The percentage difference between calculation results on PCB-180 concentration in the atmosphere at interface with vegetation obtained by models on the basis of two data sets: “reference” and “own or alternative” data sets

Month	SimpleBox 3.0_1	SimpleBox 3.0_2	SimpleBox 3.12_2	SimpleBox 3.0_3	SimpleBox 3.12_3	MSCE-POP_1	MSCE-POP_2
Jan	101.3%	2.9%	2.9%	24.4%	26.8%	4.2%	0.0%
Feb	97.2%	3.2%	3.2%	26.8%	29.5%	6.5%	0.0%
Mar	85.6%	3.3%	3.3%	26.6%	29.4%	6.9%	0.0%
Apr	75.2%	3.4%	3.4%	26.5%	29.4%	8.2%	-0.8%
May	66.3%	3.5%	3.5%	26.4%	29.3%	7.1%	-3.2%
Jun	58.8%	3.5%	3.5%	26.3%	29.3%	4.3%	-6.8%
Jul	52.4%	3.6%	3.6%	26.2%	29.3%	6.1%	-5.2%
Aug	47.0%	3.6%	3.6%	26.2%	29.3%	1.9%	-7.3%
Sep	42.4%	3.7%	3.6%	26.1%	29.2%	3.9%	-5.2%
Oct	38.5%	3.7%	3.7%	26.0%	29.2%	7.4%	-1.8%
Nov	35.1%	3.7%	3.7%	26.0%	29.2%	10.2%	1.3%
Dec	32.2%	3.7%	3.7%	25.9%	29.2%	7.7%	0.9%
Annual	64.0%	3.5%	3.5%	26.1%	29.1%	4.6%	-3.0%

MSCE-POP_1 - MSCE-POP results calculated on the basis of initial concentrations given as input data;

MSCE-POP_2 - MSCE-POP results calculated on the basis of zero initial concentrations;

SimpleBox 3.0_1 - SimpleBox results of version 3.0 calculated on the basis of initial concentrations given as input data;

SimpleBox 3.0_2 and SimpleBox 3.12_2 – SimpleBox results of versions 3.0 and 3.12, respectively, calculated on the basis of zero initial concentrations;

SimpleBox 3.0_3 and SimpleBox 3.12_3 – SimpleBox results of versions 3.0 and 3.12, respectively, calculated with historical emissions for 20-year period.

C.5.4. Comparison of calculated values of PCB-180 concentration in surface ocean layer

Reference data set. Calculation results on PCB-180 concentration in surface ocean layer calculated by the models on the basis of “reference” data set together with statistical parameters used for evaluation are presented in Table C.99.

Monthly values of PCB-180 concentration in surface ocean layer calculated by participating models on the basis of “reference” data set and taking into account non-zero (initial concentrations in media or historical emissions) and zero initial conditions are compared in Fig. C.117 a and b, respectively.

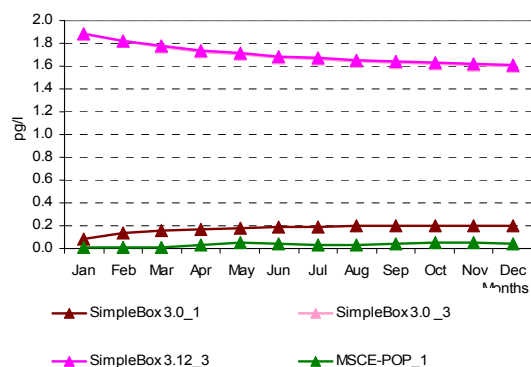


Fig. C.117a. PCB-180 concentration in surface ocean layer (pg/l) calculated by the participating models on the basis of “reference” data set and non-zero initial conditions

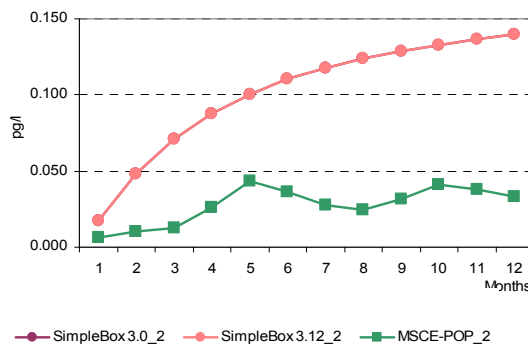


Fig. C.117b. PCB-180 concentration in surface ocean layer (pg/l) calculated by the participating models on the basis of “reference” data set and zero-initial conditions

Own/alternative data set. Calculation results on PCB-180 concentration in surface ocean layer calculated by models on the basis of “own or alternative” data sets together with statistical parameters used for evaluation are presented in Table C.100.

Monthly values of PCB-180 concentration in surface ocean layer calculated by all participating models on the basis of “own or alternative” data sets and taking into account non-zero (initial concentrations in media or historical emissions) and zero initial conditions are compared in Fig. C.118 a and b, respectively.

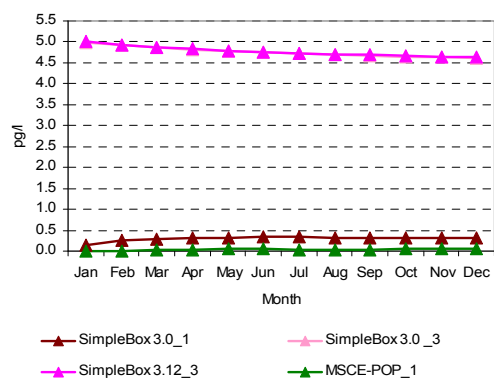


Fig. C.118a. PCB-180 concentration in surface ocean layer (pg/l) calculated by the participating models on the basis of “own or alternative” data sets and non-zero initial conditions

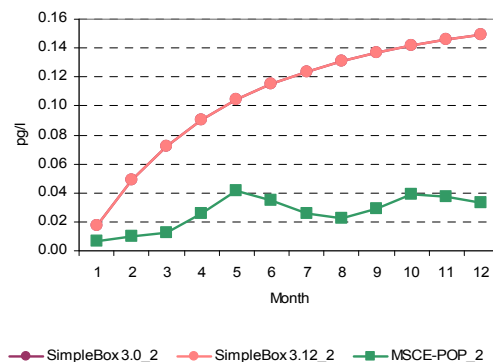


Fig. C.118b. PCB-180 concentration in surface ocean layer (pg/l) calculated by the participating models on the basis of “own or alternative” data sets and zero-initial conditions

Table C.99. Calculation results: PCB-180 concentration in surface ocean layer (pg/l) calculated by models on the basis of “reference” data set and statistical parameters used for evaluation

Month	Results obtained on the basis of initial concentrations given as input data		Results obtained on the basis of historical emissions		<i>m</i>	σ	Month	Results obtained on the basis of zero initial concentrations			<i>m</i>	σ
	SimpleBox 3.0_1 ^a	MSCE-POP_1	SimpleBox 3.0_3 ^a	SimpleBox 3.12_3 ^a				SimpleBox 3.0_2 ^a	SimpleBox 3.12_2 ^a	MSCE-POP_2		
Jan	0.09	0.01	1.89	1.89	0.97	1.06	Jan	0.02	0.02	0.01	0.01	0.01
Feb	0.13	0.01	1.82	1.82	0.95	1.01	Feb	0.05	0.05	0.01	0.04	0.02
Mar	0.16	0.01	1.77	1.78	0.93	0.98	Mar	0.07	0.07	0.01	0.05	0.03
Apr	0.17	0.03	1.73	1.74	0.92	0.94	Apr	0.09	0.09	0.03	0.07	0.04
May	0.18	0.05	1.70	1.71	0.91	0.92	May	0.10	0.10	0.04	0.08	0.03
Jun	0.19	0.05	1.68	1.69	0.90	0.91	Jun	0.11	0.11	0.04	0.09	0.04
Jul	0.19	0.04	1.66	1.67	0.89	0.90	Jul	0.12	0.12	0.03	0.09	0.05
Aug	0.20	0.03	1.64	1.66	0.88	0.89	Aug	0.12	0.12	0.02	0.09	0.06
Sep	0.20	0.04	1.63	1.64	0.88	0.88	Sep	0.13	0.13	0.03	0.10	0.06
Oct	0.20	0.05	1.62	1.63	0.88	0.87	Oct	0.13	0.13	0.04	0.10	0.05
Nov	0.20	0.05	1.61	1.62	0.87	0.86	Nov	0.14	0.14	0.04	0.10	0.06
Dec	0.20	0.04	1.60	1.61	0.86	0.86	Dec	0.14	0.14	0.03	0.10	0.06
Annual	0.18	0.03	1.70	1.71	0.90	0.92	Annual	0.10	0.10	0.03	0.08	0.04

MSCE-POP_1 - MSCE-POP results calculated on the basis of initial concentrations given as input data;

MSCE-POP_2 - MSCE-POP results calculated on the basis of zero initial concentrations;

SimpleBox 3.0_1 - SimpleBox results of version 3.0 calculated on the basis of initial concentrations given as input data;

SimpleBox 3.0_2 and SimpleBox 3.12_2 – SimpleBox results of versions 3.0 and 3.12, respectively, calculated on the basis of zero initial concentrations;

SimpleBox 3.0_3 and SimpleBox 3.12_3 – SimpleBox results of versions 3.0 and 3.12, respectively, calculated with historical emissions for 20-year period.

a – In SimpleBox results, the concentrations calculated are the bulk concentrations in the compartments. Total concentrations are averages of those over regional and continental cells.

Table C.100. Calculation results: PCB-180 concentration in surface ocean layer (pg/l) calculated by models on the basis of “own or alternative” data sets and statistical parameters used for evaluation

Month	Results obtained on the basis of initial concentrations given as input data		Results obtained on the basis of historical emissions		<i>m</i>	σ	Month	Results obtained on the basis of zero initial concentrations			<i>m</i>	σ
	SimpleBox 3.0_1 ^a	MSCE-POP_1	SimpleBox 3.0_3 ^a	SimpleBox 3.12_3 ^a				SimpleBox 3.0_2 ^a	SimpleBox 3.12_2 ^a	MSCE-POP_2		
Jan	0.15	0.01	5.00	5.00	2.54	2.84	Jan	0.02	0.02	0.01	0.01	0.01
Feb	0.24	0.01	4.92	4.93	2.53	2.77	Feb	0.05	0.05	0.01	0.04	0.02
Mar	0.29	0.02	4.86	4.87	2.51	2.72	Mar	0.07	0.07	0.01	0.05	0.03
Apr	0.32	0.03	4.81	4.83	2.50	2.68	Apr	0.09	0.09	0.03	0.07	0.04
May	0.33	0.05	4.78	4.79	2.49	2.65	May	0.10	0.10	0.04	0.08	0.04
Jun	0.33	0.05	4.74	4.76	2.47	2.64	Jun	0.12	0.12	0.03	0.09	0.05
Jul	0.33	0.04	4.72	4.73	2.45	2.62	Jul	0.12	0.12	0.03	0.09	0.06
Aug	0.33	0.03	4.69	4.71	2.44	2.61	Aug	0.13	0.13	0.02	0.09	0.06
Sep	0.32	0.04	4.67	4.69	2.43	2.60	Sep	0.14	0.14	0.03	0.10	0.06
Oct	0.32	0.06	4.65	4.67	2.42	2.58	Oct	0.14	0.14	0.04	0.11	0.06
Nov	0.31	0.05	4.63	4.65	2.41	2.58	Nov	0.15	0.15	0.04	0.11	0.06
Dec	0.31	0.04	4.61	4.63	2.40	2.57	Dec	0.15	0.15	0.03	0.11	0.07
Annual	0.30	0.04	4.76	4.77	2.47	2.66	Annual	0.11	0.11	0.03	0.08	0.05

MSCE-POP_1 - MSCE-POP results calculated on the basis of initial concentrations given as input data;

MSCE-POP_2 - MSCE-POP results calculated on the basis of zero initial concentrations;

SimpleBox 3.0_1 - SimpleBox results of version 3.0 calculated on the basis of initial concentrations given as input data;

SimpleBox 3.0_2 and SimpleBox 3.12_2 – SimpleBox results of versions 3.0 and 3.12, respectively, calculated on the basis of zero initial concentrations;

SimpleBox 3.0_3 and SimpleBox 3.12_3 – SimpleBox results of versions 3.0 and 3.12, respectively, calculated with historical emissions for 20-year period.

a – In SimpleBox results, the concentrations calculated are the bulk concentrations in the compartments. Total concentrations are averages of those over regional and continental cells.

Comparison between results obtained on the basis of two data sets. The percentage difference between calculation results obtained with two data sets of physical-chemical properties (for those models who provided calculations for both these sets) is shown in Table C.101.

Table C.101. The percentage difference between calculation results on PCB-180 concentration in surface ocean layer obtained by models on the basis of two data sets: “reference” and “own or alternative” data sets

Month	SimpleBox 3.0_1	SimpleBox 3.0_2	SimpleBox 3.12_2	SimpleBox 3.0_3	SimpleBox 3.12_3	MSCE-POP_1	MSCE-POP_2
Jan	69.4%	-0.5%	-0.5%	164.8%	164.7%	5.3%	0.2%
Feb	85.3%	0.9%	0.9%	170.5%	170.2%	5.6%	0.0%
Mar	86.3%	2.1%	2.1%	174.9%	174.4%	4.8%	0.0%
Apr	84.1%	3.0%	3.0%	178.2%	177.6%	3.9%	-0.8%
May	80.4%	3.9%	3.9%	180.8%	180.0%	2.1%	-4.1%
Jun	76.2%	4.6%	4.6%	182.7%	181.8%	1.7%	-5.7%
Jul	71.8%	5.1%	5.1%	184.2%	183.3%	0.6%	-7.2%
Aug	67.3%	5.6%	5.6%	185.4%	184.4%	0.3%	-8.2%
Sep	63.1%	6.0%	6.0%	186.4%	185.3%	1.2%	-7.0%
Oct	59.2%	6.3%	6.3%	187.2%	186.1%	3.9%	-4.4%
Nov	55.7%	6.6%	6.6%	187.9%	186.8%	5.5%	-2.4%
Dec	52.4%	6.8%	6.8%	188.5%	187.4%	5.7%	-1.2%
Annual	70.0%	5.0%	5.0%	180.6%	179.8%	9.9%	1.9%

MSCE-POP_1 - MSCE-POP results calculated on the basis of initial concentrations given as input data;

MSCE-POP_2 - MSCE-POP results calculated on the basis of zero initial concentrations;

SimpleBox 3.0_1 - SimpleBox results of version 3.0 calculated on the basis of initial concentrations given as input data;

SimpleBox 3.0_2 and SimpleBox 3.12_2 – SimpleBox results of versions 3.0 and 3.12, respectively, calculated on the basis of zero initial concentrations;

SimpleBox 3.0_3 and SimpleBox 3.12_3 – SimpleBox results of versions 3.0 and 3.12, respectively, calculated with historical emissions for 20-year period.

C.5.5. Comparison of calculated values of PCB-180 concentration in vegetation

Reference data set. Calculation results on PCB-180 concentration in vegetation calculated by the models on the basis of “reference” data set together with statistical parameters used for evaluation are presented in Table C.102.

Monthly values of PCB-180 concentration in vegetation calculated by participating models on the basis of “reference” data set and taking into account non-zero (initial concentrations in media or historical emissions) and zero initial conditions are compared in Fig. C.119 a and b, respectively.

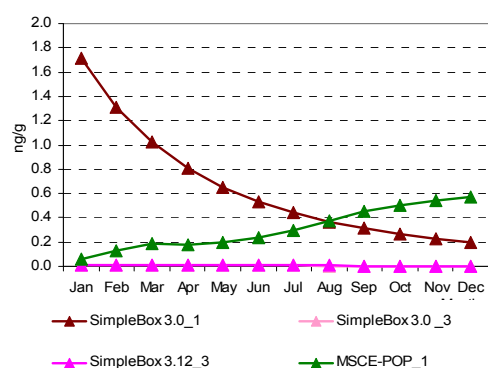


Fig. C.119a. PCB-180 concentration in vegetation (ng/g) calculated by the participating models on the basis of “reference” data set and non-zero initial conditions

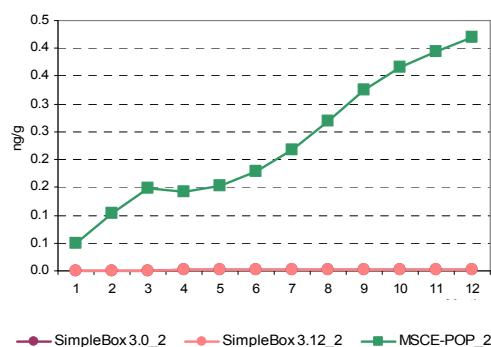


Fig. C.119b. PCB-180 concentration in vegetation (ng/g) calculated by the participating models on the basis of “reference” data set and zero-initial conditions

Own/alternative data set. Calculation results on PCB-180 concentration in vegetation calculated by models on the basis of “own or alternative” data sets together with statistical parameters used for evaluation are presented in Table C.103.

Monthly values of PCB-180 concentration in vegetation calculated by participating models on the basis of “own or alternative” data sets and taking into account non-zero (initial concentrations in media or historical emissions) and zero initial conditions are compared in Fig. C.121 a and b, respectively.

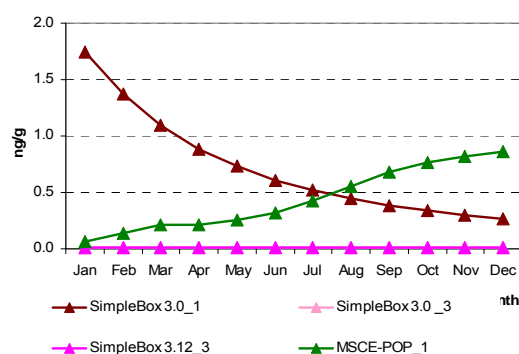


Fig. C.120a. PCB-180 concentration in vegetation (ng/g) calculated by the participating models on the basis of “own or alternative” data sets and non-zero initial conditions

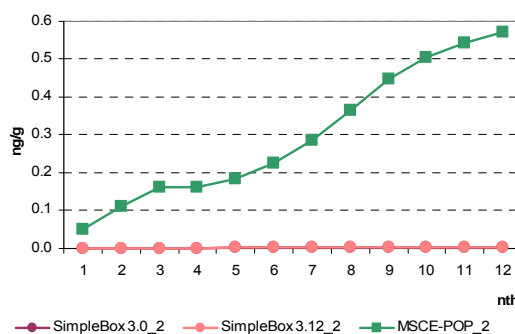


Fig. C.120b. PCB-180 concentration in vegetation (ng/g) calculated by the participating models on the basis of “own or alternative” data sets and zero-initial conditions

Table C.102. Calculation results: PCB-180 concentration in vegetation (ng/g) calculated by models on the basis of “reference” data set and statistical parameters used for evaluation

Month	Results obtained on the basis of initial concentrations given as input data		Results obtained on the basis of historical emissions		<i>m</i>	σ	Month	Results obtained on the basis of zero initial concentrations			<i>m</i>	σ
	SimpleBox 3.0_1 ^a	MSCE-POP_1	SimpleBox 3.0_3 ^a	SimpleBox 3.12_3 ^a				SimpleBox 3.0_2 ^a	SimpleBox 3.12_2 ^a	MSCE-POP_2		
Jan	1.72	0.06	0.01	0.01	0.45	0.85	Jan	0.0002	0.0002	0.05	0.02	0.03
Feb	1.31	0.13	0.01	0.01	0.36	0.64	Feb	0.001	0.001	0.10	0.03	0.06
Mar	1.02	0.18	0.01	0.01	0.31	0.49	Mar	0.001	0.001	0.15	0.05	0.09
Apr	0.81	0.18	0.01	0.01	0.25	0.38	Apr	0.001	0.001	0.14	0.05	0.08
May	0.65	0.19	0.01	0.01	0.21	0.30	May	0.001	0.001	0.15	0.05	0.09
Jun	0.53	0.23	0.01	0.01	0.19	0.25	Jun	0.002	0.002	0.18	0.06	0.10
Jul	0.44	0.29	0.01	0.01	0.19	0.22	Jul	0.002	0.002	0.22	0.07	0.12
Aug	0.37	0.37	0.00	0.00	0.19	0.21	Aug	0.002	0.002	0.27	0.09	0.15
Sep	0.31	0.45	0.00	0.00	0.19	0.22	Sep	0.002	0.002	0.33	0.11	0.19
Oct	0.27	0.50	0.00	0.00	0.19	0.24	Oct	0.002	0.002	0.37	0.12	0.21
Nov	0.23	0.54	0.00	0.00	0.19	0.25	Nov	0.002	0.002	0.39	0.13	0.23
Dec	0.20	0.57	0.00	0.00	0.19	0.27	Dec	0.002	0.002	0.42	0.14	0.24
Annual	0.66	0.26	0.01	0.01	0.23	0.31	Annual	0.002	0.002	0.20	0.07	0.11

MSCE-POP_1 - MSCE-POP results calculated on the basis of initial concentrations given as input data;

MSCE-POP_2 - MSCE-POP results calculated on the basis of zero initial concentrations;

SimpleBox 3.0_1 - SimpleBox results of version 3.0 calculated on the basis of initial concentrations given as input data;

SimpleBox 3.0_2 and SimpleBox 3.12_2 – SimpleBox results of versions 3.0 and 3.12, respectively, calculated on the basis of zero initial concentrations;

SimpleBox 3.0_3 and SimpleBox 3.12_3 – SimpleBox results of versions 3.0 and 3.12, respectively, calculated with historical emissions for 20-year period.

a – In SimpleBox results, the concentrations calculated are the bulk concentrations in the compartments. Total concentrations are averages of those over regional and continental cells.

Table C.103. Calculation results: PCB-180 concentration in vegetation (ng/g) calculated by models on the basis of “own or alternative” data sets and statistical parameters used for evaluation

Month	Results obtained on the basis of initial concentrations given as input data		Results obtained on the basis of historical emissions		<i>m</i>	<i>σ</i>	Month	Results obtained on the basis of zero initial concentrations			<i>m</i>	<i>σ</i>
	SimpleBox 3.0_1 ^a	MSCE-POP_1	SimpleBox 3.0_3 ^a	SimpleBox 3.12_3 ^a				SimpleBox 3.0_2 ^a	SimpleBox 3.12_2 ^a	MSCE-POP_2		
Jan	1.74	0.06	0.01	0.01	0.45	0.86	Jan	0.0003	0.0003	0.05	0.02	0.03
Feb	1.37	0.14	0.01	0.01	0.38	0.66	Feb	0.001	0.001	0.11	0.04	0.06
Mar	1.10	0.21	0.01	0.01	0.33	0.52	Mar	0.001	0.001	0.16	0.05	0.09
Apr	0.89	0.22	0.01	0.01	0.28	0.42	Apr	0.002	0.002	0.16	0.06	0.09
May	0.73	0.25	0.01	0.01	0.25	0.34	May	0.002	0.002	0.18	0.06	0.11
Jun	0.61	0.32	0.01	0.01	0.24	0.29	Jun	0.002	0.002	0.23	0.08	0.13
Jul	0.52	0.43	0.01	0.01	0.24	0.27	Jul	0.002	0.002	0.29	0.10	0.16
Aug	0.44	0.56	0.01	0.01	0.25	0.29	Aug	0.002	0.002	0.36	0.12	0.21
Sep	0.38	0.68	0.01	0.01	0.27	0.33	Sep	0.003	0.003	0.45	0.15	0.26
Oct	0.34	0.77	0.01	0.01	0.28	0.36	Oct	0.003	0.003	0.50	0.17	0.29
Nov	0.30	0.82	0.01	0.01	0.28	0.38	Nov	0.003	0.003	0.54	0.18	0.31
Dec	0.26	0.86	0.01	0.01	0.28	0.40	Dec	0.003	0.003	0.57	0.19	0.33
Annual	0.63	0.44	0.01	0.01	0.27	0.32	Annual	0.002	0.002	0.30	0.10	0.17

MSCE-POP_1 - MSCE-POP results calculated on the basis of initial concentrations given as input data;

MSCE-POP_2 - MSCE-POP results calculated on the basis of zero initial concentrations;

SimpleBox 3.0_1 - SimpleBox results of version 3.0 calculated on the basis of initial concentrations given as input data;

SimpleBox 3.0_2 and SimpleBox 3.12_2 – SimpleBox results of versions 3.0 and 3.12, respectively, calculated on the basis of zero initial concentrations;

SimpleBox 3.0_3 and SimpleBox 3.12_3 – SimpleBox results of versions 3.0 and 3.12, respectively, calculated with historical emissions for 20-year period.

a – In SimpleBox results, the concentrations calculated are the bulk concentrations in the compartments. Total concentrations are averages of those over regional and continental cells.

Comparison between results obtained on the basis of two data sets. The percentage difference between calculation results obtained with two data sets of physical-chemical properties (for those models who provided calculations for both these sets) is shown in Table C.104.

Table C.104. The percentage difference between calculation results on PCB-180 concentration in vegetation obtained by models on the basis of two data sets: “reference” and “own or alternative” data sets

Month	SimpleBox 3.0_1	SimpleBox 3.0_2	SimpleBox 3.12_2	SimpleBox 3.0_3	SimpleBox 3.12_3	MSCE-POP_1	MSCE-POP_2
Jan	1.4%	22.7%	22.7%	-14.6%	-14.4%	8.5%	2.9%
Feb	4.2%	24.2%	24.2%	-9.8%	-9.1%	13.6%	6.8%
Mar	6.9%	25.5%	25.5%	-4.9%	-3.7%	15.8%	8.7%
Apr	9.6%	26.7%	26.7%	0.1%	1.7%	21.3%	14.0%
May	12.3%	27.9%	27.9%	5.1%	7.1%	30.6%	20.3%
Jun	14.9%	28.9%	28.9%	10.1%	12.4%	39.2%	26.4%
Jul	17.4%	29.9%	29.9%	14.9%	17.6%	46.4%	32.3%
Aug	20.0%	30.8%	30.8%	19.7%	22.6%	50.4%	35.3%
Sep	22.6%	31.7%	31.7%	24.2%	27.3%	51.9%	37.1%
Oct	25.2%	32.5%	32.5%	28.5%	31.8%	52.4%	37.3%
Nov	27.8%	33.3%	33.3%	32.6%	36.0%	51.9%	37.6%
Dec	30.4%	34.0%	34.0%	36.4%	39.9%	50.6%	36.4%
Annual	-3.9%	30.5%	30.5%	11.3%	13.7%	71.4%	54.0%

MSCE-POP_1 - MSCE-POP results calculated on the basis of initial concentrations given as input data;

MSCE-POP_2 - MSCE-POP results calculated on the basis of zero initial concentrations;

SimpleBox 3.0_1 - SimpleBox results of version 3.0 calculated on the basis of initial concentrations given as input data;

SimpleBox 3.0_2 and SimpleBox 3.12_2 – SimpleBox results of versions 3.0 and 3.12, respectively, calculated on the basis of zero initial concentrations;

SimpleBox 3.0_3 and SimpleBox 3.12_3 – SimpleBox results of versions 3.0 and 3.12, respectively, calculated with historical emissions for 20-year period.

C.5.6. Comparison of calculated values of PCB-180 concentration in surface soil layer

Reference data set. Calculation results on PCB-180 concentration in surface soil layer calculated by the models on the basis of “reference” data set together with statistical parameters used for evaluation are presented in Table C.105.

Monthly values of PCB-180 concentration in surface soil layer calculated by all participating models on the basis of “reference” data set and taking into account non-zero (initial concentrations in media or historical emissions) and zero initial conditions are compared in Fig. C.121 a and b, respectively.

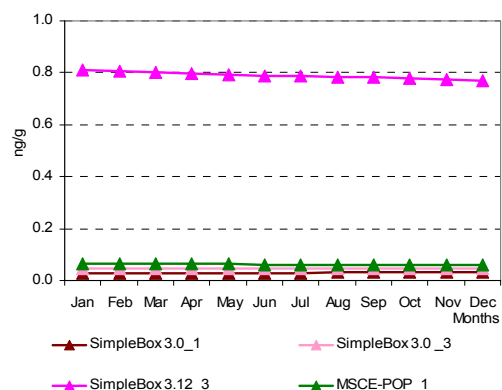


Fig.3.121a. PCB-180 concentration in surface soil layer (ng/g) calculated by the participating models on the basis of “reference” data set and non-zero initial conditions (all models)

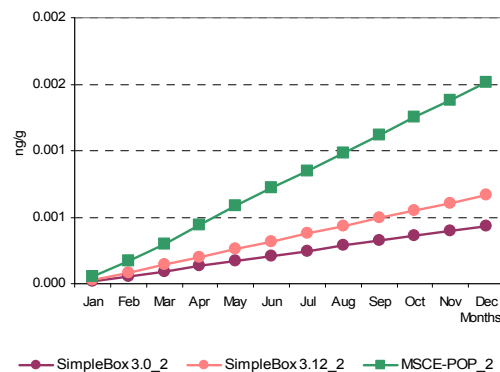


Fig.3.121b. PCB-180 concentration in surface soil layer (ng/g) calculated by the participating models on the basis of “reference” data set and zero-initial conditions

Own/alternative data set. Calculation results on PCB-180 concentration in surface soil layer calculated by the models on the basis of “own or alternative” data sets together with statistical parameters used for evaluation are presented in Table C.106.

Monthly values of PCB-180 concentration in surface soil layer calculated by all participating models on the basis of “own or alternative” data sets and taking into account non-zero (initial concentrations in media or historical emissions) and zero initial conditions are compared in Fig. C.122a and b, respectively.

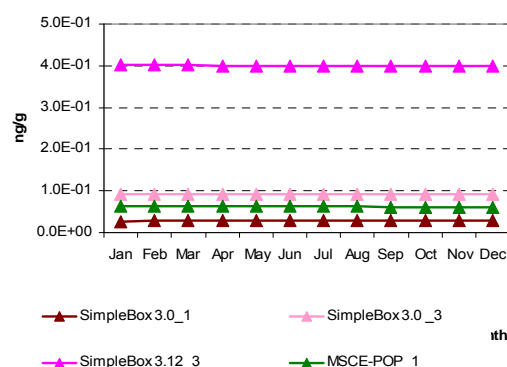


Fig. C.122a. PCB-180 concentration in surface soil layer (ng/g) calculated by the participating models on the basis of “own or alternative” data sets and non-zero initial conditions (all models)

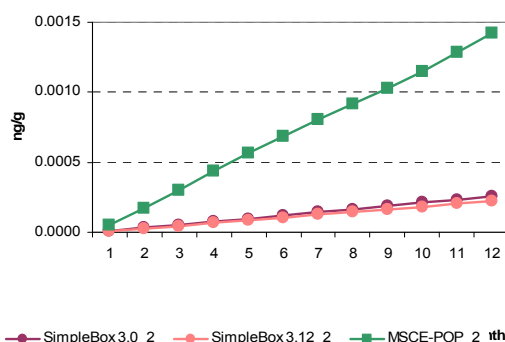


Fig. C.122b. PCB-180 concentration in surface soil layer (ng/g) calculated by the participating models on the basis of “own or alternative” data sets and zero-initial conditions

Table C.105. Calculation results: PCB-180 concentration in surface soil layer (ng/g) calculated by models on the basis of “reference” data set and statistical parameters used for evaluation

Month	Results obtained on the basis of initial concentrations given as input data		Results obtained on the basis of historical emissions		<i>m</i>	σ	Month	Results obtained on the basis of zero initial concentrations			<i>m</i>	σ
	SimpleBox 3.0_1 ^a	MSCE-POP_1	SimpleBox 3.0_3 ^a	SimpleBox 3.12_3 ^a				SimpleBox 3.0_2 ^a	SimpleBox 3.12_2 ^a	MSCE-POP_2		
Jan	2.72E-02	6.38E-02	4.83E-02	8.11E-01	2.38E-01	3.83E-01	Jan	1.77E-05	2.71E-05	5.20E-05	3.23E-05	1.77E-05
Feb	2.81E-02	6.34E-02	4.81E-02	8.08E-01	2.37E-01	3.81E-01	Feb	5.53E-05	8.45E-05	1.70E-04	1.03E-04	5.96E-05
Mar	2.87E-02	6.30E-02	4.79E-02	8.04E-01	2.36E-01	3.79E-01	Mar	9.30E-05	1.42E-04	2.98E-04	1.78E-04	1.07E-04
Apr	2.92E-02	6.26E-02	4.77E-02	7.96E-01	2.34E-01	3.75E-01	Apr	1.31E-04	2.01E-04	4.43E-04	2.58E-04	1.64E-04
May	2.95E-02	6.23E-02	4.75E-02	7.93E-01	2.33E-01	3.73E-01	May	1.70E-04	2.59E-04	5.82E-04	3.37E-04	2.17E-04
Jun	2.97E-02	6.19E-02	4.73E-02	7.89E-01	2.32E-01	3.71E-01	Jun	2.08E-04	3.17E-04	7.18E-04	4.14E-04	2.69E-04
Jul	2.99E-02	6.15E-02	4.71E-02	7.89E-01	2.32E-01	3.72E-01	Jul	2.46E-04	3.75E-04	8.51E-04	4.91E-04	3.19E-04
Aug	3.00E-02	6.11E-02	4.69E-02	7.85E-01	2.31E-01	3.70E-01	Aug	2.84E-04	4.34E-04	9.83E-04	5.67E-04	3.68E-04
Sep	3.01E-02	6.08E-02	4.67E-02	7.81E-01	2.30E-01	3.68E-01	Sep	3.22E-04	4.92E-04	1.12E-03	6.45E-04	4.20E-04
Oct	3.01E-02	6.04E-02	4.65E-02	7.78E-01	2.29E-01	3.66E-01	Oct	3.60E-04	5.49E-04	1.25E-03	7.20E-04	4.69E-04
Nov	3.01E-02	6.01E-02	4.63E-02	7.74E-01	2.28E-01	3.64E-01	Nov	3.97E-04	6.06E-04	1.38E-03	7.95E-04	5.18E-04
Dec	3.01E-02	5.98E-02	4.62E-02	7.70E-01	2.27E-01	3.63E-01	Dec	4.34E-04	6.62E-04	1.51E-03	8.69E-04	5.67E-04
Annual	2.94E-02	6.21E-02	4.71E-02	7.91E-01	2.32E-01	3.73E-01	Annual	2.45E-04	3.46E-04	6.47E-04	4.13E-04	2.09E-04

MSCE-POP_1 - MSCE-POP results calculated on the basis of initial concentrations given as input data;

MSCE-POP_2 - MSCE-POP results calculated on the basis of zero initial concentrations;

SimpleBox 3.0_1 - SimpleBox results of version 3.0 calculated on the basis of initial concentrations given as input data;

SimpleBox 3.0_2 and SimpleBox 3.12_2 – SimpleBox results of versions 3.0 and 3.12, respectively, calculated on the basis of zero initial concentrations;

SimpleBox 3.0_3 and SimpleBox 3.12_3 – SimpleBox results of versions 3.0 and 3.12, respectively, calculated with historical emissions for 20-year period.

a – In SimpleBox results, the concentrations calculated are the bulk concentrations in the compartments. Total concentrations are averages of those over regional and continental cells.

Table C.106. Calculation results: PCB-180 concentration in surface soil layer (ng/g) calculated by models on the basis of “own or alternative” data sets and statistical parameters used for evaluation

Month	Results obtained on the basis of initial concentrations given as input data		Results obtained on the basis of historical emissions		<i>m</i>	σ	Month	Results obtained on the basis of zero initial concentrations			<i>m</i>	σ
	SimpleBox 3.0_1 ^a	MSCE-POP_1	SimpleBox 3.0_3 ^a	SimpleBox 3.12_3 ^a				SimpleBox 3.0_2 ^a	SimpleBox 3.12_2 ^a	MSCE-POP_2		
Jan	2.70E-02	6.39E-02	9.21E-02	4.01E-01	1.46E-01	1.72E-01	Jan	1.01E-05	8.81E-06	5.19E-05	2.36E-05	2.45E-05
Feb	2.76E-02	6.36E-02	9.20E-02	4.01E-01	1.46E-01	1.72E-01	Feb	3.17E-05	2.76E-05	1.69E-04	7.61E-05	8.05E-05
Mar	2.80E-02	6.33E-02	9.20E-02	4.01E-01	1.46E-01	1.72E-01	Mar	5.34E-05	4.67E-05	2.96E-04	1.32E-04	1.42E-04
Apr	2.84E-02	6.31E-02	9.19E-02	4.00E-01	1.46E-01	1.72E-01	Apr	7.57E-05	6.61E-05	4.38E-04	1.93E-04	2.12E-04
May	2.87E-02	6.28E-02	9.19E-02	4.00E-01	1.46E-01	1.71E-01	May	9.80E-05	8.56E-05	5.70E-04	2.51E-04	2.76E-04
Jun	2.89E-02	6.25E-02	9.18E-02	4.00E-01	1.46E-01	1.71E-01	Jun	1.20E-04	1.05E-04	6.90E-04	3.05E-04	3.33E-04
Jul	2.91E-02	6.22E-02	9.17E-02	4.00E-01	1.46E-01	1.71E-01	Jul	1.43E-04	1.25E-04	8.02E-04	3.57E-04	3.86E-04
Aug	2.92E-02	6.18E-02	9.17E-02	4.00E-01	1.46E-01	1.71E-01	Aug	1.66E-04	1.45E-04	9.13E-04	4.08E-04	4.38E-04
Sep	2.93E-02	6.15E-02	9.16E-02	3.99E-01	1.45E-01	1.71E-01	Sep	1.88E-04	1.64E-04	1.03E-03	4.61E-04	4.93E-04
Oct	2.94E-02	6.13E-02	9.16E-02	3.99E-01	1.45E-01	1.71E-01	Oct	2.11E-04	1.84E-04	1.15E-03	5.15E-04	5.50E-04
Nov	2.95E-02	6.10E-02	9.15E-02	3.99E-01	1.45E-01	1.71E-01	Nov	2.34E-04	2.04E-04	1.29E-03	5.76E-04	6.19E-04
Dec	2.96E-02	6.08E-02	9.15E-02	3.98E-01	1.45E-01	1.71E-01	Dec	2.56E-04	2.23E-04	1.42E-03	6.33E-04	6.82E-04
Annual	2.89E-02	6.23E-02	9.17E-02	4.00E-01	1.46E-01	1.71E-01	Annual	1.43E-04	1.15E-04	7.35E-04	3.31E-04	3.50E-04

MSCE-POP_1 - MSCE-POP results calculated on the basis of initial concentrations given as input data;

MSCE-POP_2 - MSCE-POP results calculated on the basis of zero initial concentrations;

SimpleBox 3.0_1 - SimpleBox results of version 3.0 calculated on the basis of initial concentrations given as input data;

SimpleBox 3.0_2 and SimpleBox 3.12_2 – SimpleBox results of versions 3.0 and 3.12, respectively, calculated on the basis of zero initial concentrations;

SimpleBox 3.0_3 and SimpleBox 3.12_3 – SimpleBox results of versions 3.0 and 3.12, respectively, calculated with historical emissions for 20-year period;

a – In SimpleBox results, the concentrations calculated are the bulk concentrations in the compartments. Total concentrations are averages of those over regional and continental cells.

Comparison between results obtained on the basis of two data sets. The percentage difference between calculation results obtained with two data sets of physical-chemical properties (for those models who provided calculations for both these sets) is shown in Table C.107.

Table C.107. The percentage difference between calculation results on PCB-180 concentration in surface soil layer obtained by models on the basis of two data sets: “reference” and “own or alternative” data sets

Month	SimpleBox 3.0_1	SimpleBox 3.0_2	SimpleBox 3.12_2	SimpleBox 3.0_3	SimpleBox 3.12_3	MSCE-POP_1	MSCE-POP_2
Jan	-0.8%	-42.9%	-67.4%	90.7%	-50.5%	0.2%	-0.2%
Feb	-1.8%	-42.7%	-67.3%	91.4%	-50.3%	0.3%	-0.6%
Mar	-2.4%	-42.5%	-67.2%	92.0%	-50.1%	0.5%	-0.7%
Apr	-2.7%	-42.4%	-67.1%	92.7%	-49.7%	0.8%	-1.1%
May	-2.9%	-42.2%	-67.0%	93.4%	-49.5%	0.8%	-2.1%
Jun	-2.9%	-42.0%	-66.9%	94.1%	-49.3%	1.0%	-3.9%
Jul	-2.8%	-41.8%	-66.8%	94.7%	-49.3%	1.1%	-5.8%
Aug	-2.6%	-41.7%	-66.7%	95.4%	-49.1%	1.1%	-7.1%
Sep	-2.4%	-41.5%	-66.6%	96.1%	-48.9%	1.2%	-8.0%
Oct	-2.2%	-41.3%	-66.5%	96.8%	-48.7%	1.5%	-8.0%
Nov	-1.9%	-41.2%	-66.4%	97.5%	-48.5%	1.5%	-6.5%
Dec	-1.6%	-41.0%	-66.3%	98.1%	-48.3%	1.7%	-6.0%
Annual	-1.7%	-41.6%	-66.6%	94.7%	-49.4%	0.4%	13.7%

MSCE-POP_1 - MSCE-POP results calculated on the basis of initial concentrations given as input data;

MSCE-POP_2 - MSCE-POP results calculated on the basis of zero initial concentrations;

SimpleBox 3.0_1 - SimpleBox results of version 3.0 calculated on the basis of initial concentrations given as input data;

SimpleBox 3.0_2 and SimpleBox 3.12_2 – SimpleBox results of versions 3.0 and 3.12, respectively, calculated on the basis of zero initial concentrations;

SimpleBox 3.0_3 and SimpleBox 3.12_3 – SimpleBox results of versions 3.0 and 3.12, respectively, calculated with historical emissions for 20-year period.

C.5.7. Comparison of PCB-180 intermedia mass flows and concentrations at the interfaces of main environmental media

A preliminary analysis of model results on intermedia mass flows and on concentrations in the main environmental media formed at their interfaces is presented in this section. In the comparison the calculated values of PCB-180 mass flows from the atmosphere to soil, to water, to vegetation and from vegetation to soil (see Sections 3.4.1–3.4.4 above) and values of PCB-180 concentrations in the atmosphere at its interface with underlying surfaces (soil, ocean and vegetation); in the surface layer of soil, ocean and vegetation (see Sections 3.5.1–3.5.6 above) are considered.

The comparison of PCB-180 mass flows transported from one compartment to another presented in Sections 3.4.1–3.4.4 includes results of one-year calculation with zero initial concentrations obtained by CliMoChem, MSCE-POP, SimpleBox models and with initial concentrations in media given as input data calculated by CAN/POPs, MSCE-POP and SimpleBox models; as well as results of long-term calculations for 20-year period with zero initial data with historical emissions carried out by CliMoChem and SimpleBox models. Results of CliMoChem, MSCE-POP, and SimpleBox models obtained on the basis of two different physical-chemical data sets allow us to reveal sensitivity of the estimates on intermedia mass flows to the variations in the input data.

The comparison of calculated concentrations presented in Sections 3.5.1–3.5.6 includes results of one-year calculations made on the basis of initial conditions (MSCE-POP, SimpleBox) and zero initial

concentrations (MSCE-POP and SimpleBox) together with results of long-term calculations performed with historical emissions (SimpleBox 3.0 and 3.12). The results on concentrations in the main environmental media are obtained with the use of two different physical-chemical data sets by MSCE-POP and SimpleBox models.

In the section below the analysis of mass flows and concentrations in the media is presented for model results obtained on the basis of initial conditions and historical emissions. Calculated values of PCB intermedia mass flows and concentrations in the main media are presented in this section for four following interfaces: atmosphere-soil; vegetation – soil; atmosphere - seawater and atmosphere – vegetation.

Atmosphere-soil. Annual values of net exchange flow between atmosphere and soil calculated on the basis of two data sets of physical-chemical properties are compared between different models in Fig. C.123. Different colour of columns corresponds to the different types of calculations (one-year calculations on the basis of initial data; and then long-tem calculations with historical emissions). The blue line in the plots shows the value of the corresponding parameter averaged between models.

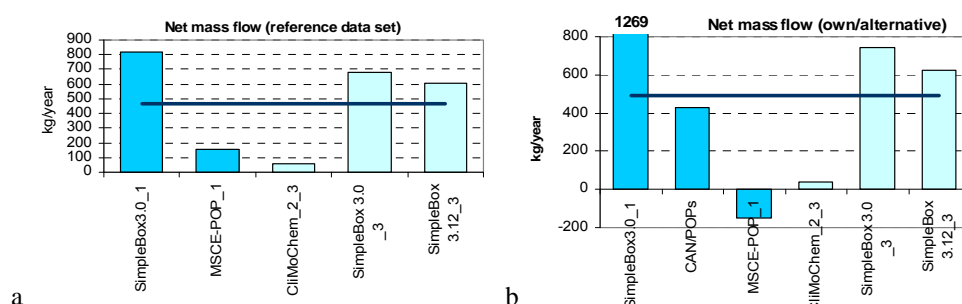


Fig.3.123. Comparison of PCB-180 annual values of net exchange flow between atmosphere and soil calculated by different models on the basis of “reference”(a) and “own or alternative” (b) data sets

Since the net exchange flow is a sum of different types of exchange flows, below the latter are considered separately. Comparison of annual values of dry and wet deposition and gaseous exchange flows between atmosphere and soil calculated by models on the basis of two physical-chemical data sets is presented in Fig. C.124.

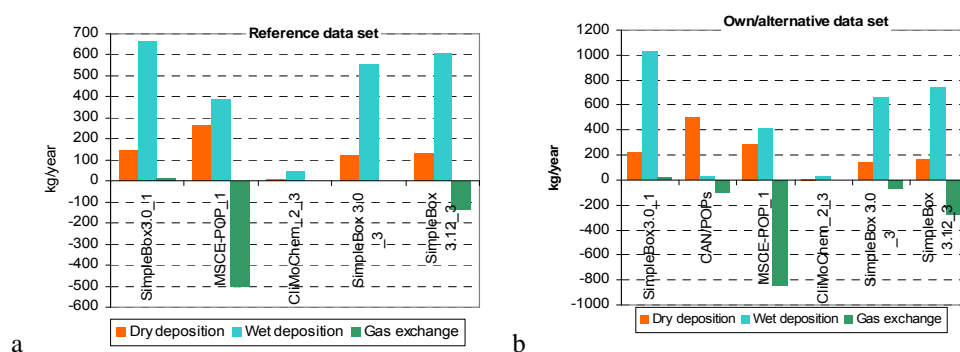


Fig.3.124. Comparison of PCB-180 annual values of dry and wet deposition and gaseous exchange flows between atmosphere and soil calculated by different models on the basis of “reference”(a) and “own or alternative” (b) data sets.

To reveal differences in calculated values obtained on “reference” and “own/alternative” data sets, model results on dry and wet depositions and gaseous exchange between the atmosphere and soil are considered below in more detail.

Comparison of annual values of PCB-180 dry deposition from the atmosphere to soil calculated by the models on the basis of “reference” and “own or alternative” data sets is presented in Fig. C.125. The blue line in the plots shows the value of the corresponding parameter averaged between models. Different color of columns corresponds to the different types of calculations (one-year calculations on the basis of initial data; and then long-term calculations with historical emissions).

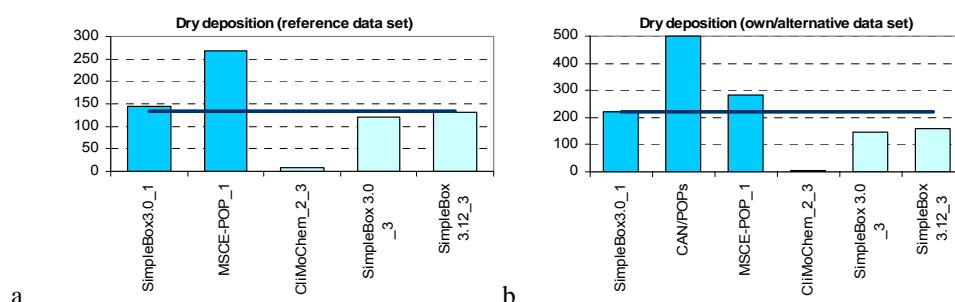


Fig.3.125. Comparison of annual values of PCB-180 mass flows transported from the atmosphere to soil: dry deposition (kg/year) calculated by different models on the basis of “reference”(a) and “own or alternative” (b) data sets

Comparison of annual values of PCB-180 wet deposition mass flows from the atmosphere to soil calculated by the models on the basis of “reference” and “own or alternative” data sets is presented in Fig.3.126. The blue line in the plots shows the value of the corresponding parameter averaged between models. Different color of columns corresponds to the different types of calculations (one-year calculations on the basis of initial data; and then long-term calculations with historical emissions).

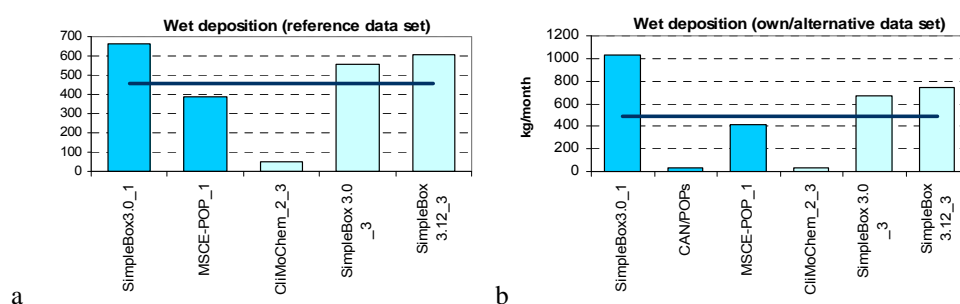


Fig.3.126. Comparison of annual values of PCB-180 mass flows transported from the atmosphere to soil: wet deposition (kg/year) calculated by different models on the basis of “reference”(a) and “own or alternative” (b) data sets

A comparison of annual values of PCB-180 gaseous exchange between the atmosphere and soil calculated by the models on the basis of “reference” and “own or alternative” data sets is presented in Fig.3.127. The blue line in the plots shows the value of the corresponding parameter averaged between models. Different colour of columns corresponds to the different types of calculations (one-year calculations on the basis of initial data; and then long-term calculations with historical emissions).

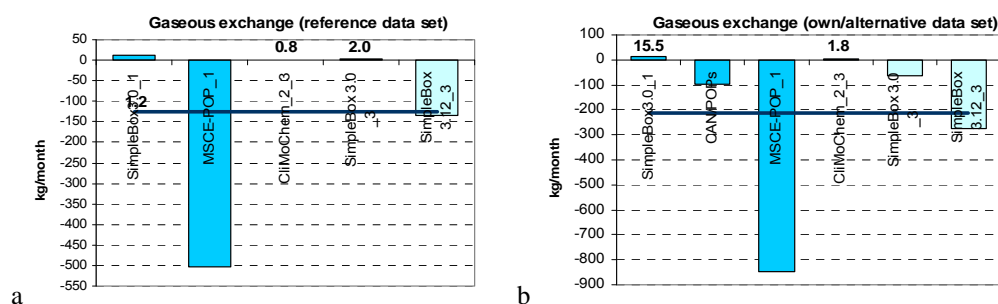


Fig.3.127. Comparison of annual values of PCB-180 mass flows transported from the atmosphere to soil: gaseous exchange (kg/year) calculated by different models on the basis of “reference” (a) and “own or alternative” (b) data sets.

Model results on concentrations of PCB-180 in the atmosphere at its interface with soil and in the surface soil layer, which are conditioned by the considered above intermedia flows calculated with “reference” and “own/alternative” data sets are considered below.

Comparison of annual values of PCB-180 concentration in the atmosphere at its interface with soil calculated by the models on the basis of “reference” and “own or alternative” data set is presented in Fig.3.128. The blue line in the plots shows the value of the corresponding parameter averaged between models. Different color of columns corresponds to the different types of calculations (one-year calculations on the basis of initial data; and then long-term calculations with historical emissions).

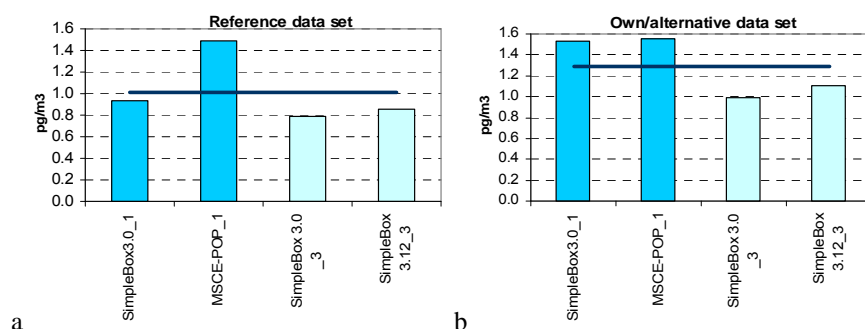


Fig.3.128. Comparison of annual values of PCB-180 concentration in the atmosphere at its interface with soil (pg/m³) calculated by different models on the basis of “reference” (a) and “own or alternative” (b) data sets

Comparison of annual values of PCB-180 concentration in surface soil layer calculated by the models on the basis of “reference” and “own/alternative” data sets is presented in Fig.3.129. The black line in the plot shows the value of the corresponding parameter averaged between models. Different color of columns corresponds to the different types of calculations (one-year calculations on the basis of initial data; and then long-term calculations with historical emissions).

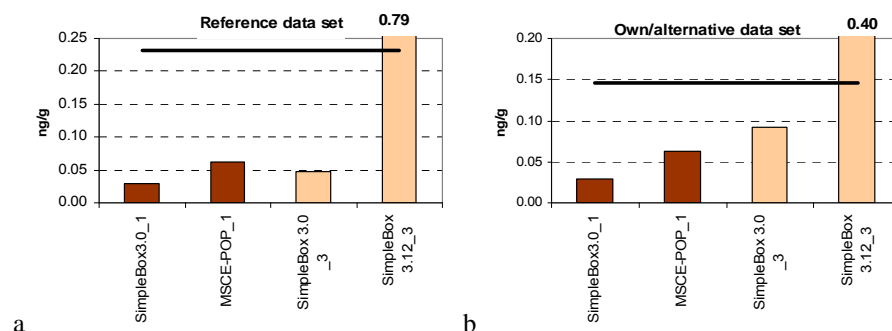


Fig.3.129. Comparison of annual values of PCB-180 concentration in surface soil layer (ng/g) calculated by different models on the basis of “reference” (a) and “own or alternative” (b) data sets.

Vegetation – soil. Comparison of annual values of PCB-180 mass flows from vegetation to soil calculated by the models on the basis of “reference” and “own or alternative” data sets is presented in Fig.3.130. Different color of columns corresponds to the different types of calculations (one-year calculations on the basis of initial data; then long-term calculations with historical emissions).

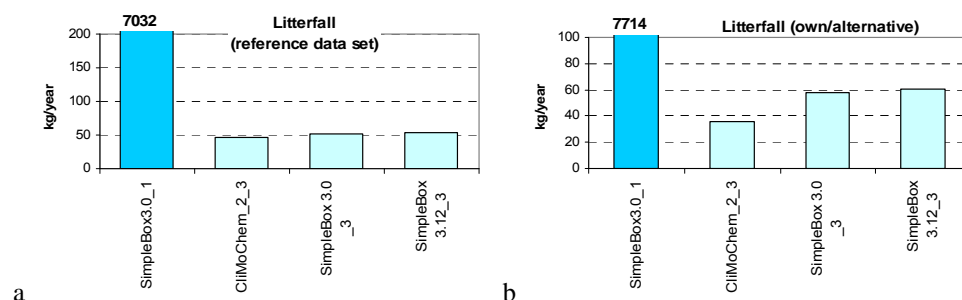


Fig.3.130. Comparison of annual values of PCB-180 mass flows transported from vegetation to soil (kg/year) calculated by different models on the basis of “reference”(a) and “own or alternative” data sets (b)

Comparison of annual values of litterfall mass flows calculated by models on the basis of two physical-chemical data sets is presented in Fig. C.131 (see also Table C.70 given in Section 3.4.2).

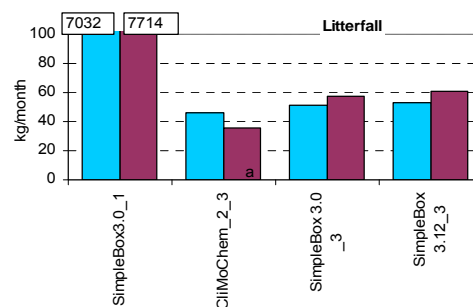


Fig.3.131. Comparison of PCB-180 annual values of mass flows between vegetation and soil calculated by different models on the basis of two data sets

Atmosphere - seawater. Annual values of net exchange flow between atmosphere and seawater calculated on the basis of two data sets are compared between different models in Fig. C.132. The blue line in the plots shows the value of the corresponding parameter averaged between models. Different color of columns corresponds to the different types of calculations (one-year calculations on the basis of initial data; and then long-term calculations with historical emissions).

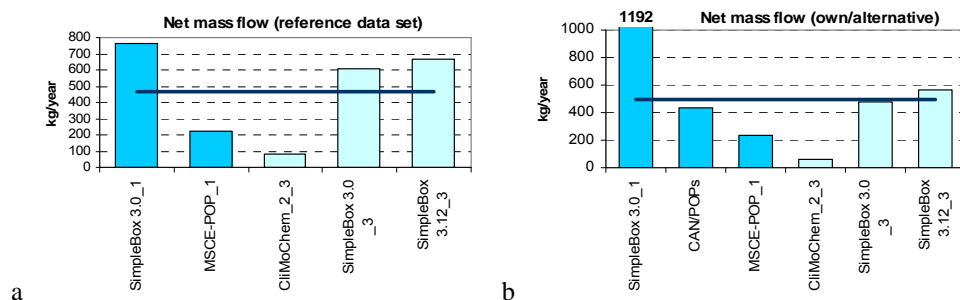


Fig.3.132. Comparison of PCB-180 annual values of net exchange flow between atmosphere and seawater calculated by different models on the basis of “reference”(a) and “own or alternative” (b) data sets

Annual absolute values of dry and wet deposition and gaseous exchange flows, which formed the considered net exchange flows between the atmosphere and seawater, are compared below. Comparison of annual values of dry and wet deposition and gaseous exchange flows between the atmosphere and seawater calculated by models on the basis of two physical-chemical data sets is presented in Fig. C.133.

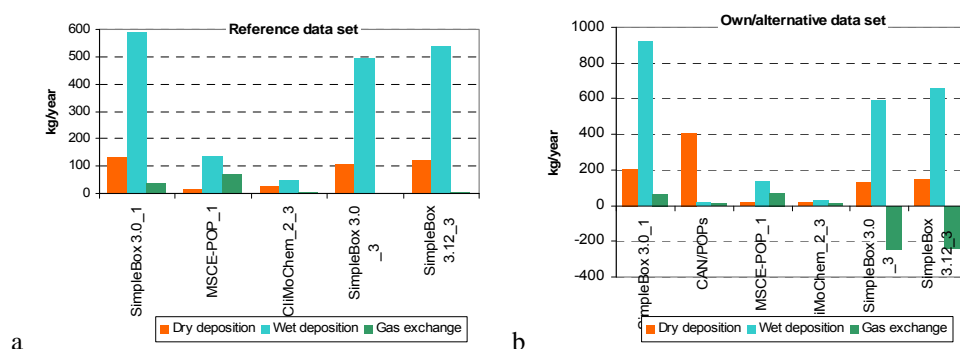


Fig.3.133. Comparison of PCB-180 annual values of dry and wet deposition and gaseous exchange flows between atmosphere and seawater calculated by different models on the basis of “reference”(a) and “own or alternative” (b) data sets

Model results on dry and wet depositions and gaseous exchange between the atmosphere and soil are considered below in more detail.

Comparison of annual values of PCB-180 dry deposition mass flows from the atmosphere to water calculated by the models on the basis of “reference” and “own or alternative” data sets is presented in Fig.3.134. The blue line in the plots shows the value of the corresponding parameter averaged between models. Different color of columns corresponds to the different types of calculations (one-year calculations on the basis of initial data; and then long-term calculations with historical emissions).

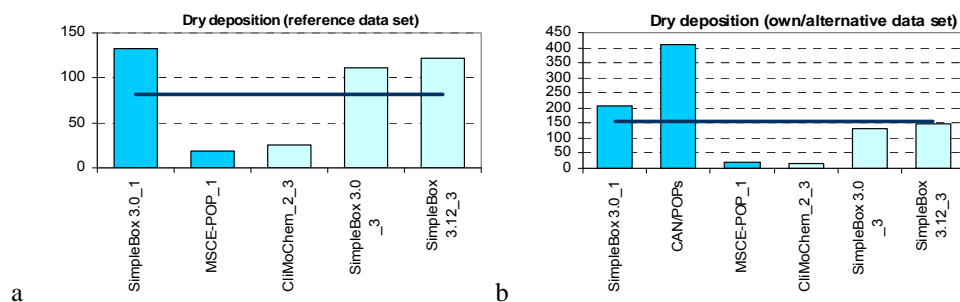


Fig.3.134. Comparison of annual values of PCB-180 mass flows transported from the atmosphere to water: dry deposition (kg/year) calculated by different models on the basis of “reference”(a) and “own or alternative” (b) data sets

Comparison of annual values of PCB-180 wet deposition mass flows from the atmosphere to water calculated by the models on the basis of “reference” and “own or alternative” data sets is presented in Fig.3.135. The blue line in the plots shows the value of the corresponding parameter averaged between models. Different color of columns corresponds to the different types of calculations (one-year calculations on the basis of initial data; and then long-term calculations with historical emissions).

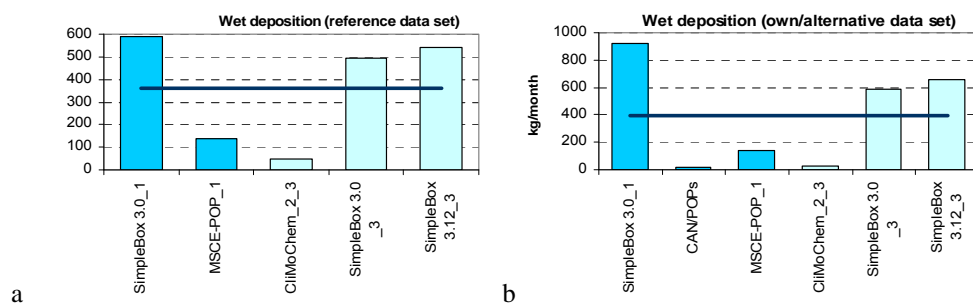


Fig.3.135. Comparison of annual values of PCB-180 mass flows transported from the atmosphere to water: wet deposition (kg/year) calculated by different models on the basis of “reference”(a) and “own or alternative” (b) data sets

Comparison of annual values of PCB-180 gaseous exchange mass flows between the atmosphere and water calculated by the models on the basis of “reference” and “own or alternative” data sets is presented in Fig.3.136. The blue line in the plots shows the value of the corresponding parameter averaged between models. Different color of columns corresponds to the different types of calculations (one-year calculations on the basis of initial data; and then long-term calculations with historical emissions).

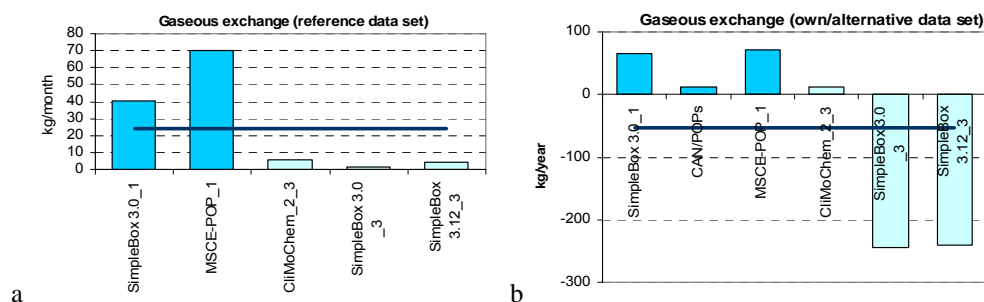


Fig.3.136. Comparison of annual values of PCB-180 mass flows transported from the atmosphere to water: gaseous exchange (kg/year) calculated by different models on the basis of “reference”(a) and “own or alternative” (b) data sets

Model results on concentrations of PCB-180 in the atmosphere at its interface with ocean and in the surface water layer, which are conditioned by the considered above intermedia flows calculated with “reference” and “own/alternative” data sets are considered below.

Comparison of annual values of PCB-180 concentration in the atmosphere at its interface with ocean calculated by the models on the basis of “reference” and “own/alternative” data sets is presented in Fig.3.137. The blue line in the plots shows the value of the corresponding parameter averaged between models. Different color of columns corresponds to the different types of calculations (one-year calculations on the basis of initial data; and then long-term calculations with historical emissions).

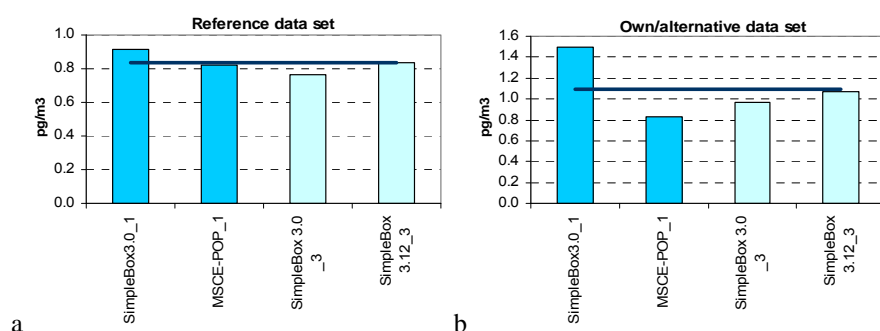


Fig.3.137. Comparison of annual values of PCB-180 concentration in the atmosphere at its interface with ocean (pg/m^3) calculated by different models on the basis of “reference”(a) and “own or alternative” (b) data sets

Comparison of annual values of PCB-180 concentration in surface ocean layer calculated by the models on the basis of “reference” and “own/alternative” data sets is presented in Fig.3.138. The blue line in the plots shows the value of the corresponding parameter averaged between models. Different color of columns corresponds to the different types of calculations (one-year calculations on the basis of initial data; and then long-term calculations with historical emissions).

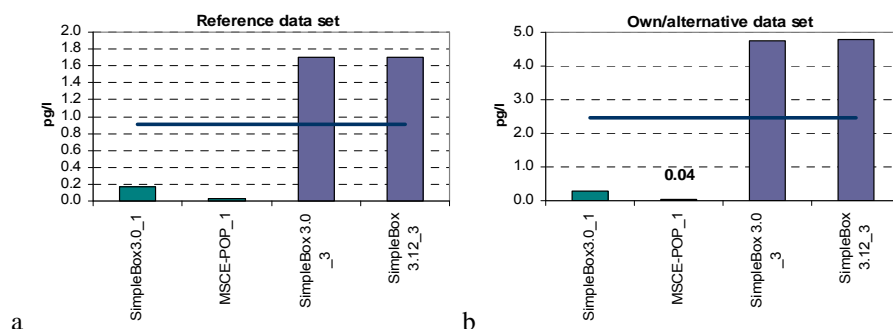


Fig.3.138. Comparison of annual values of PCB-180 concentration in surface ocean layer (pg/l) calculated by different models on the basis of “reference”(a) and “own or alternative” (b) data sets

Atmosphere – vegetation. Annual values of net exchange flow between atmosphere and vegetation calculated on the basis of two data sets (“reference” and “own/alternative”) are compared between different models in Fig. C.139. The blue line in the plots shows the value of the corresponding parameter averaged between models. Different color of columns corresponds to the different types of calculations (one-year calculations on the basis of initial data; and then long-term calculations with historical emissions).

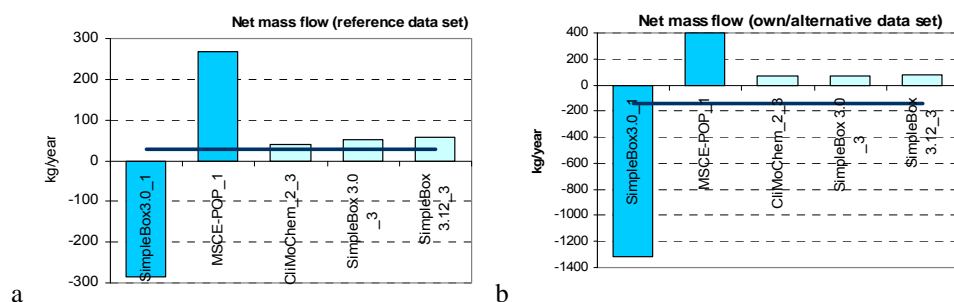


Fig.3.139. Comparison of PCB-180 annual values of net exchange flow between atmosphere and vegetation calculated by different models on the basis of “reference”(a) and “own or alternative” (b) data sets

Comparison of annual values of dry and wet deposition and gaseous exchange flows between the atmosphere and vegetation calculated by models on the basis of two physical-chemical data sets is presented in Fig. C.140.

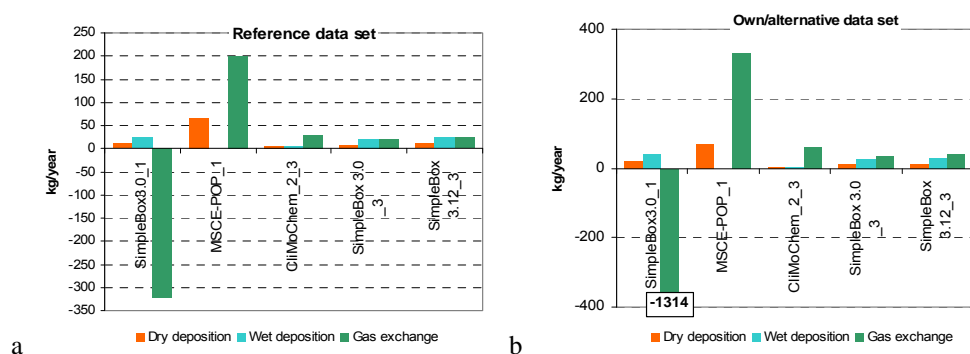


Fig.3.140. Comparison of PCB-180 annual values of dry and wet deposition and gaseous exchange flows between atmosphere and vegetation calculated by different models on the basis of “reference”(a) and “own or alternative” (b) data sets

To reveal differences in calculated values obtained on “reference” and “own/alternative” data sets, model results on dry and wet depositions and gaseous exchange between the atmosphere and soil are considered below in more detail.

Comparison of annual values of PCB-180 dry deposition mass flows from the atmosphere to vegetation calculated by the models on the basis of “**reference**” and “**own or alternative**” data sets is presented in Fig.3.142. The blue line in the plots shows the value of the corresponding parameter averaged between models. Different color of columns corresponds to the different types of calculations (one-year calculations on the basis of initial data; and then long-term calculations with historical emissions).

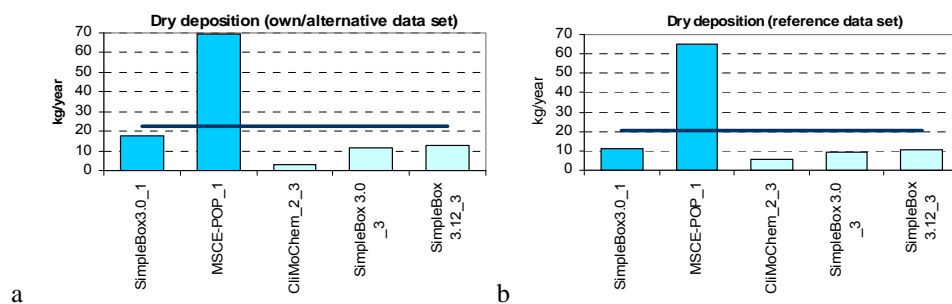


Fig.3.141. Comparison of annual values of PCB-180 mass flows transported from the atmosphere to vegetation: dry deposition (kg/year) calculated by different models on the basis of “reference”(a) and “own or alternative” (b) data sets

Comparison of annual values of PCB-180 wet deposition mass flows transported from the atmosphere to vegetation calculated by the models on the basis of “reference” and “own or alternative” data sets is presented in Fig.3.142. The blue line in the plots shows the value of the corresponding parameter averaged between models. Different color of columns corresponds to the different types of calculations (one-year calculations on the basis of initial data; and then long-term calculations with historical emissions).

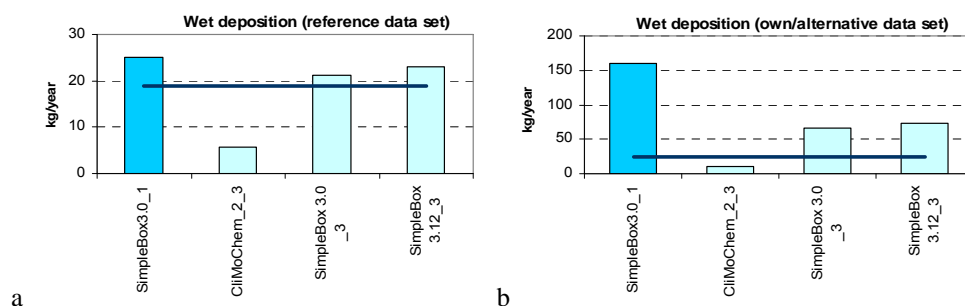


Fig.3.142. Comparison of annual values of PCB-180 mass flows transported from the atmosphere to vegetation: wet deposition (kg/year) calculated by different models on the basis of “reference”(a) and “own or alternative” (b) data sets

Comparison of annual values of PCB-180 gaseous exchange mass flows from the atmosphere to vegetation calculated by the models on the basis of “reference” and “own or alternative” data sets is presented in Fig.3.143. The blue line in the plots shows the value of the corresponding parameter averaged between models. Different color of columns corresponds to the different types of calculations (one-year calculations on the basis of initial data; and then long-term calculations with historical emissions).

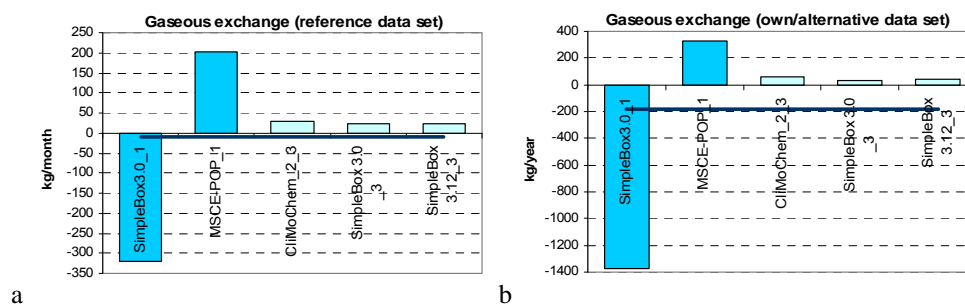


Fig.3.143. Comparison of annual values of PCB-180 mass flows transported from the atmosphere to vegetation: gaseous exchange (kg/year) calculated by different models on the basis of “reference”(a) and “own or alternative” (b) data sets

Model results on concentrations of PCB-180 in the atmosphere at its interface with vegetation and in vegetation, which are conditioned by the considered above intermedia flows calculated with “reference” and “own/alternative” data sets are considered below.

Comparison of annual values of PCB-180 concentration in the atmosphere at its interface with vegetation calculated by the models on the basis of “reference” and “own/alternative” data sets (see Tables 3.97 and 3.98 in Section 3.5.3) is presented in Fig.3.144. The blue line in the plots shows the value of the corresponding parameter averaged between models. Different color of columns corresponds to the different types of calculations (one-year calculations on the basis of initial data; and then long-term calculations with historical emissions).

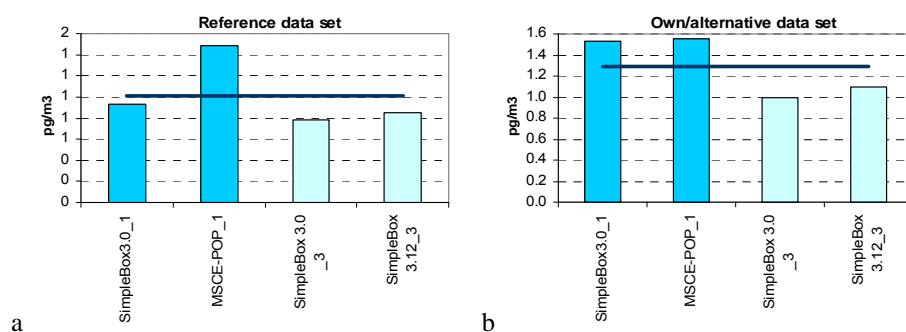


Fig.3.144. Comparison of annual values of PCB-180 concentration in the atmosphere at its interface with vegetation (pg/m3) calculated by different models on the basis of “reference”(a) and “own or alternative” (b) data sets

Comparison of annual values of PCB-180 concentration in vegetation calculated by the models on the basis of “reference” and “own/alternative” data sets (see Tables 3.103 and 3.104 in Section 3.5.5) is presented in Fig.3.145. The green line in the plot shows the value of the corresponding parameter averaged between models. Different color of columns corresponds to the different types of calculations (one-year calculations on the basis of initial data; and then long-term calculations with historical emissions).

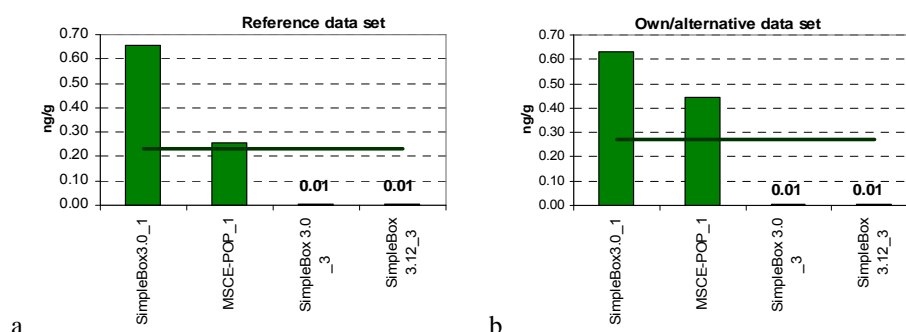


Fig.3.145. Comparison of annual values of PCB-180 concentration in vegetation (ng/g) calculated by different models on the basis of “reference”(a) and “own or alternative” (b) data sets