WFA3 1.0
User Guide

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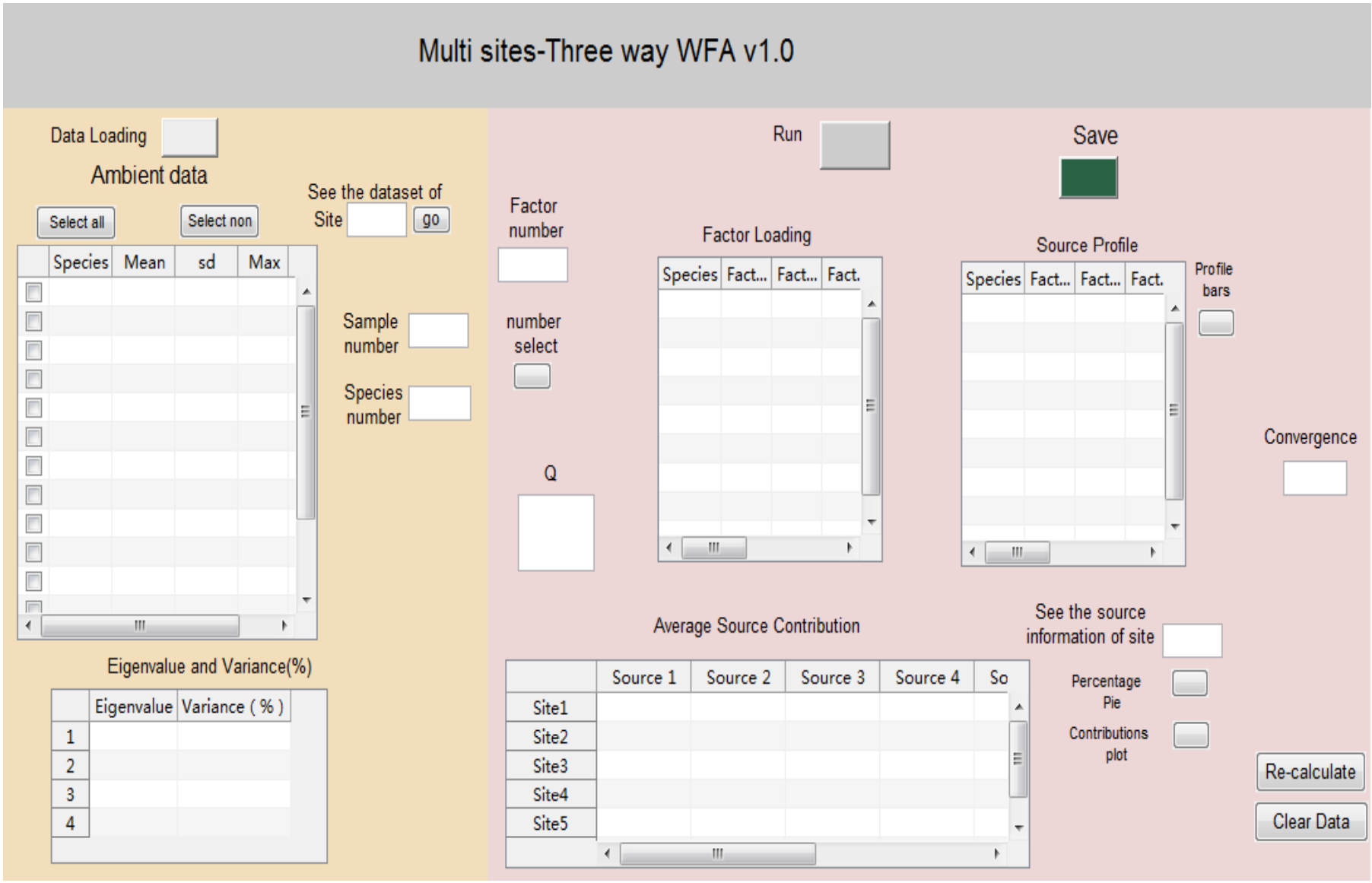
WFA3 1.0

Three-dimensional WFA 1.0 is a three-dimensional weighted factor model and can be applied to estimate the contribution of sources to particulate matter, for analyzing the multi-site data

WFA3 1.0


Multi sites-Three way WFA v1.0
Data Loading
Ambient data
Select all
Select non
See the dataset of
Site
go
Species
Mean
sd
Max
Sample number
Species number
Eigenvalue and Variance(%)
Eigenvalue
Variance (%)
1
2
3
4
Factor number
number select
Q
Run
Save
Factor Loading
Species
Fact...
Fact...
Fact.
Source Profile
Profile bars
Convergence
Average Source Contribution
Source 1
Source 2
Source 3
Source 4
So
Site1
Site2
Site3
Site4
Site5
See the source information of site
Percentage Pie
Contributions plot
Re-calculate
Clear Data

WFA3 1.0

- **RUNNING ENVIRONMENT：**

  Win XP、Win7、Win8（32 bit or 64 bit system）

  Before running the program, **Matlab (2009 or higher) should be** install firstly.

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- **Download address:**

http://russellgroup.ce.gatech.edu/node/16

or

http://env.nankai.edu.cn/air/list/?110_1.html

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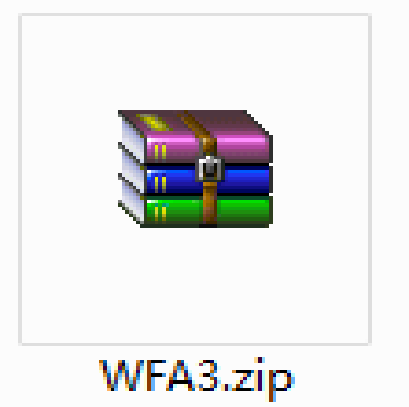
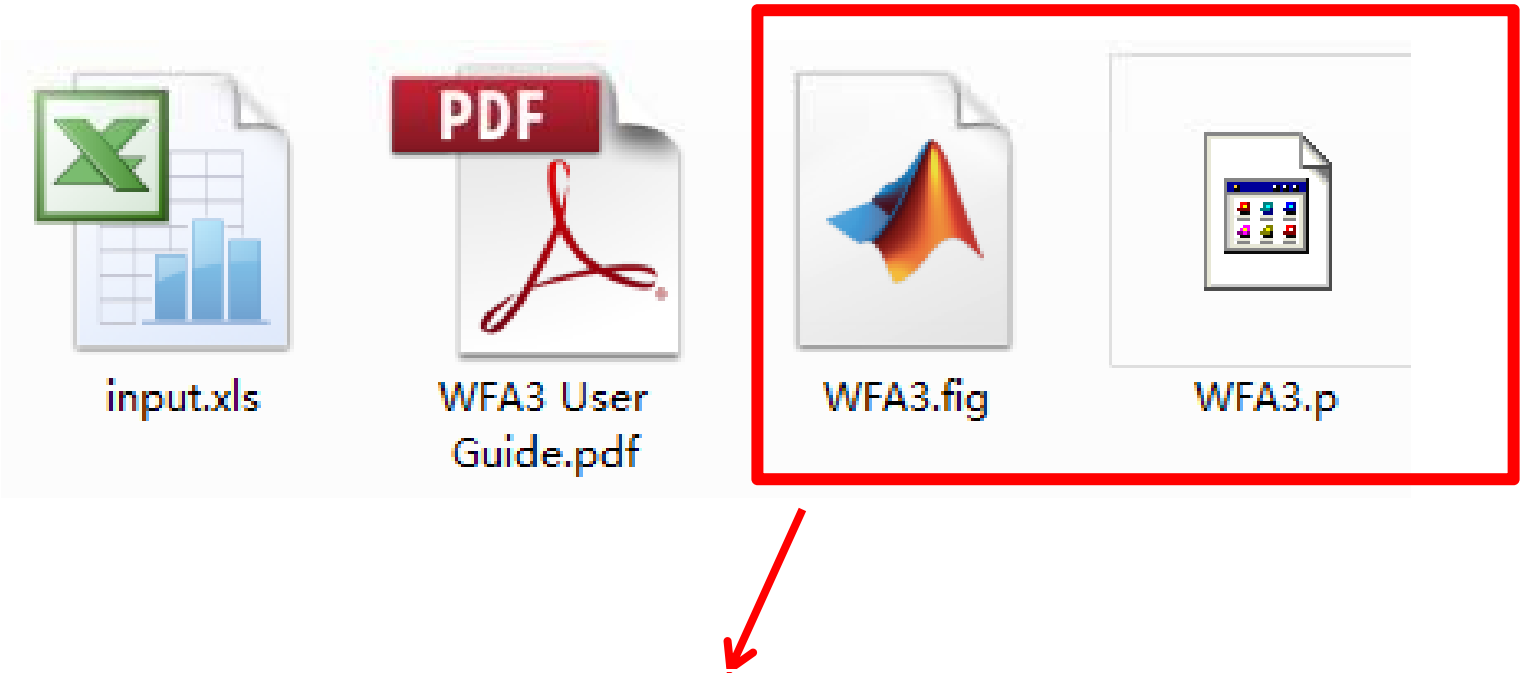


Extract the WFA3.zip file

WFA3 1.0

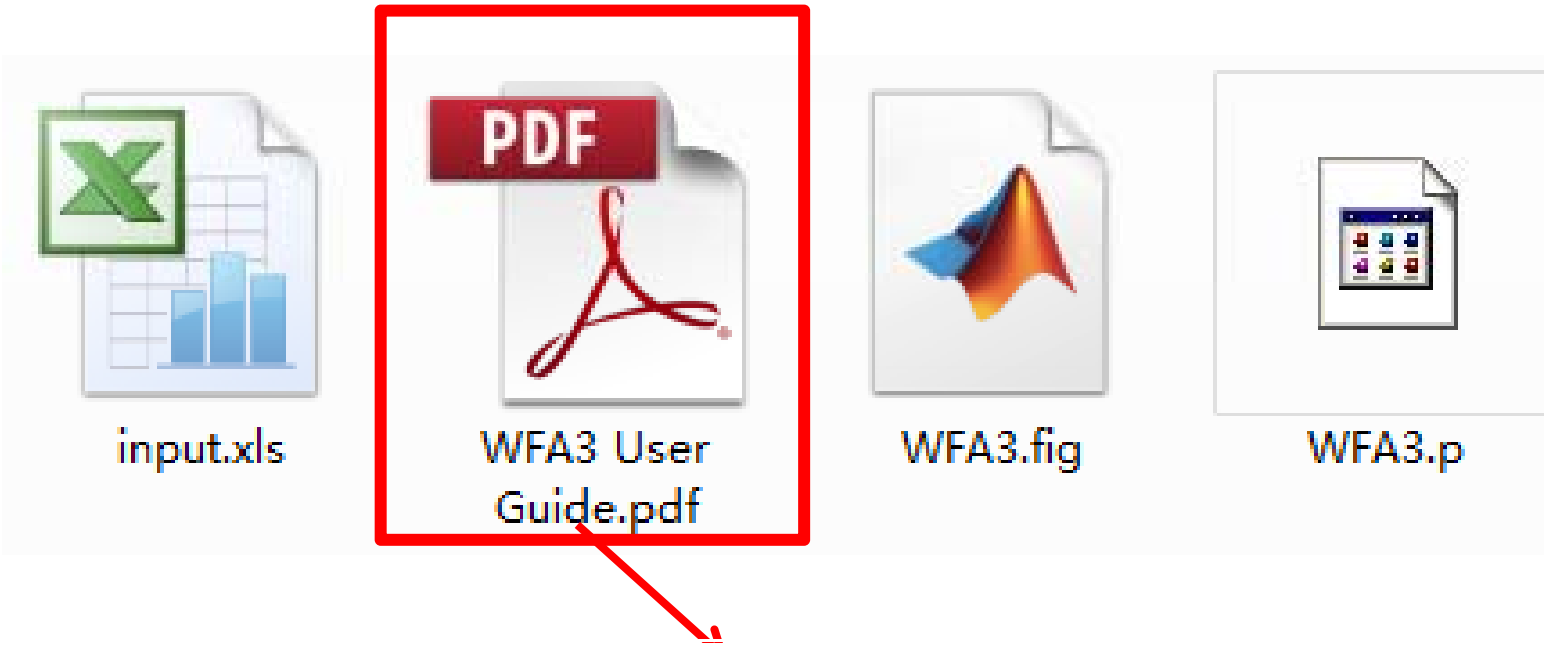
Four files in CMBGC1.zip



Matlab programe files

WFA3 1.0

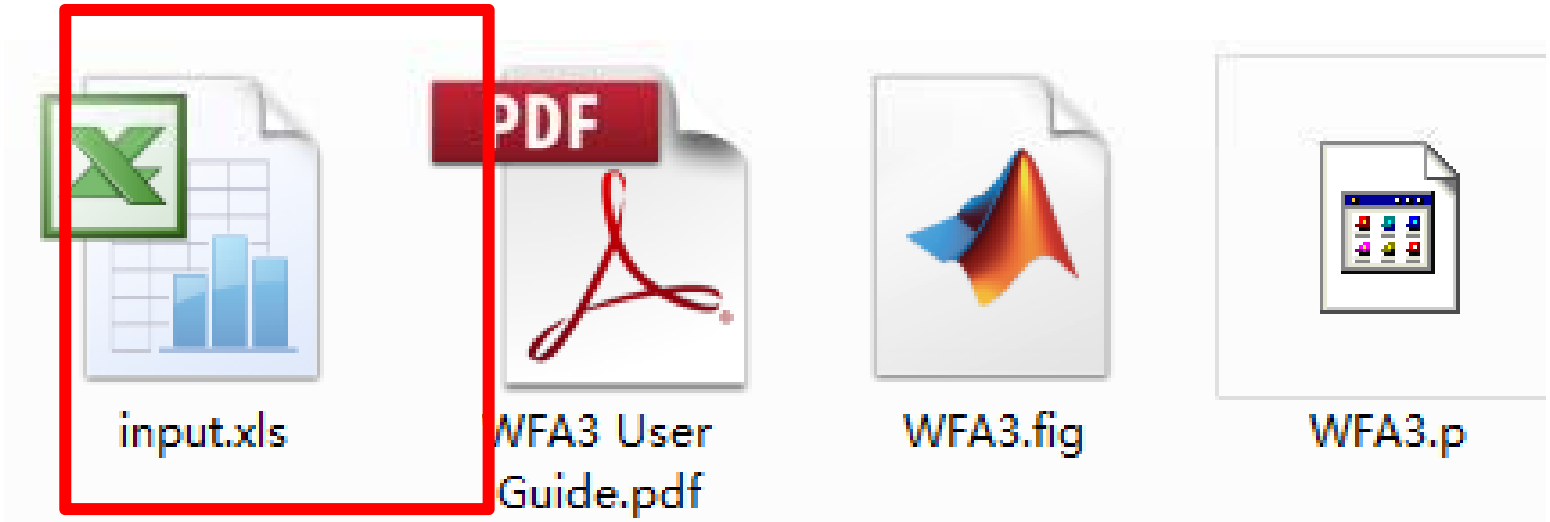
Four files in WFA3 1.0.zip



User Guide for WFA3

WFA3 1.0

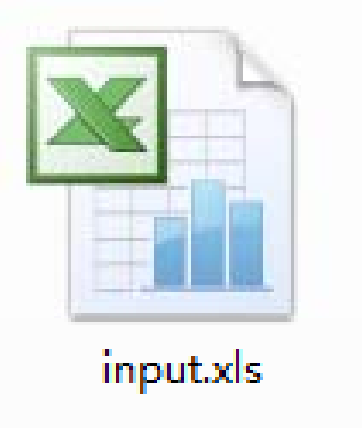
Four files in CMBGC1.zip



Example of input file

WFA3 1.0

- Input file

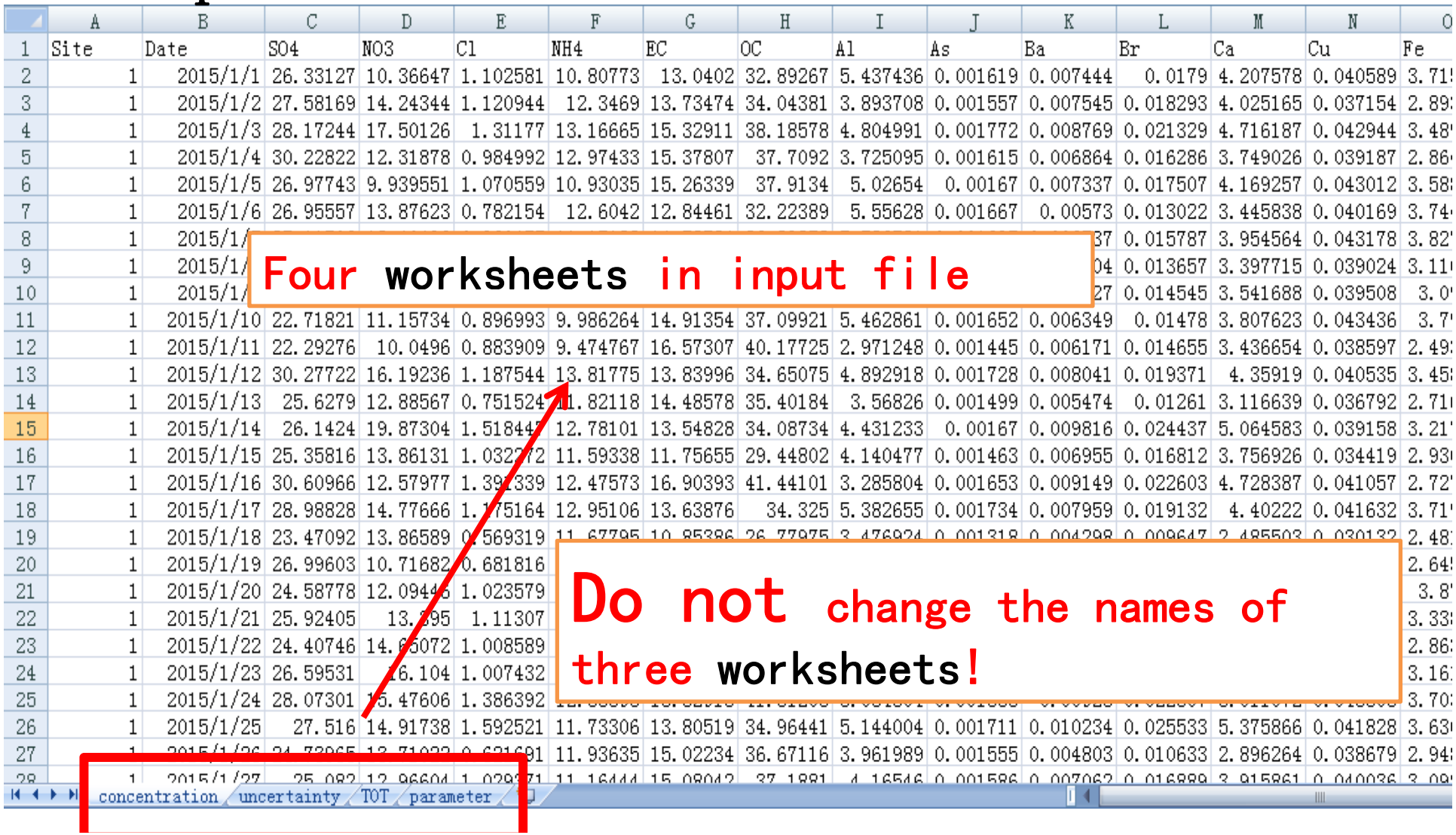


Input file of WFA3 1.0 is .xls file

(User can modify the name of input file)

WFA3 1.0

Input file



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Site	Date	SO4	NO3	Cl	NH4	EC	OC	Al	As	Ba	Br	Ca	Cu	Fe
2	1	2015/1/1	26.33127	10.36647	1.102581	10.80773	13.0402	32.89267	5.437436	0.001619	0.007444	0.0179	4.207578	0.040589	3.71
3	1	2015/1/2	27.58169	14.24344	1.120944	12.3469	13.73474	34.04381	3.893708	0.001557	0.007545	0.018293	4.025165	0.037154	2.89
4	1	2015/1/3	28.17244	17.50126	1.31177	13.16665	15.32911	38.18578	4.804991	0.001772	0.008769	0.021329	4.716187	0.042944	3.48
5	1	2015/1/4	30.22822	12.31878	0.984992	12.97433	15.37807	37.7092	3.725095	0.001615	0.006864	0.016286	3.749026	0.039187	2.86
6	1	2015/1/5	26.97743	9.939551	1.070559	10.93035	15.26339	37.9134	5.02654	0.00167	0.007337	0.017507	4.169257	0.043012	3.58
7	1	2015/1/6	26.95557	13.87623	0.782154	12.6042	12.84461	32.22389	5.55628	0.001667	0.00573	0.013022	3.445838	0.040169	3.74
8	1	2015/1/									37	0.015787	3.954564	0.043178	3.82
9	1	2015/1/									04	0.013657	3.397715	0.039024	3.11
10	1	2015/1/									27	0.014545	3.541688	0.039508	3.0
11	1	2015/1/10	22.71821	11.15734	0.896993	9.986264	14.91354	37.09921	5.462861	0.001652	0.006349	0.01478	3.807623	0.043436	3.7
12	1	2015/1/11	22.29276	10.0496	0.883909	9.474767	16.57307	40.17725	2.971248	0.001445	0.006171	0.014655	3.436654	0.038597	2.49
13	1	2015/1/12	30.27722	16.19236	1.187544	13.81775	13.83996	34.65075	4.892918	0.001728	0.008041	0.019371	4.35919	0.040535	3.45
14	1	2015/1/13	25.6279	12.88567	0.751524	11.82118	14.48578	35.40184	3.56826	0.001499	0.005474	0.01261	3.116639	0.036792	2.71
15	1	2015/1/14	26.1424	19.87304	1.518447	12.78101	13.54828	34.08734	4.431233	0.00167	0.009816	0.024437	5.064583	0.039158	3.21
16	1	2015/1/15	25.35816	13.86131	1.032372	11.59338	11.75655	29.44802	4.140477	0.001463	0.006955	0.016812	3.756926	0.034419	2.93
17	1	2015/1/16	30.60966	12.57977	1.391339	12.47573	16.90393	41.44101	3.285804	0.001653	0.009149	0.022603	4.728387	0.041057	2.72
18	1	2015/1/17	28.98828	14.77666	1.175164	12.95106	13.63876	34.325	5.382655	0.001734	0.007959	0.019132	4.40222	0.041632	3.71
19	1	2015/1/18	23.47092	13.86589	0.569319	11.67795	10.85386	26.77975	3.476924	0.001318	0.004298	0.009647	2.485503	0.030132	2.48
20	1	2015/1/19	26.99603	10.71682	0.681816										2.64
21	1	2015/1/20	24.58778	12.0944	1.023579										3.8
22	1	2015/1/21	25.92405	13.395	1.11307										3.33
23	1	2015/1/22	24.40746	14.65072	1.008589										2.86
24	1	2015/1/23	26.59531	16.104	1.007432										3.16
25	1	2015/1/24	28.07301	15.47606	1.386392										3.70
26	1	2015/1/25	27.516	14.91738	1.592521	11.73306	13.80519	34.96441	5.144004	0.001711	0.010234	0.025533	5.375866	0.041828	3.63
27	1	2015/1/26	24.73965	13.71022	0.621691	11.93635	15.02234	36.67116	3.961989	0.001555	0.004803	0.010633	2.896264	0.038679	2.94
28	1	2015/1/27	25.082	12.96604	1.029371	11.16444	15.08042	37.1881	4.16546	0.001586	0.007062	0.016889	3.915861	0.040036	3.09

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Input file

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Site	Date	SO4	NO3	Cl	NH4	EC	OC	Al	As	Ba	Br	Ca	Cu	Fe
2	1	2015/1/1	26.33127	10.36647	1.102581	10.80773	13.0402	32.89267	5.437436	0.001619	0.007444	0.0179	4.207578	0.040589	3.71
3	1	2015/1/2	27.58169	14.24344	1.120944	12.3469	13.73474	34.04381	3.893708	0.001557	0.007545	0.018293	4.025165	0.037154	2.89
4	1	2015/1/3	28.17244	17.50126	1.31177	13.16665	15.32911	38.18578	4.804991	0.001772	0.008769	0.021329	4.716187	0.042944	3.48
5	1	2015/1/4	30.22822	12.31878	0.984992	12.97433	15.37807	37.7092	3.725095	0.001615	0.006864	0.016286	3.749026	0.039187	2.86
6	1	2015/1/5	26.97743	9.939551	1.070559	10.93035	15.26339	37.9134	5.02654	0.00167	0.007337	0.017507	4.169257	0.043012	3.58
7	1	2015/1/6	26.95557	13.87623	0.782154	12.6042	12.84461	32.22389	5.55628	0.001667	0.00573	0.013022	3.445838	0.040169	3.74
8	1	2015/1/7	25.11706	12.40496	0.960457	11.15128	14.53584	36.29273	5.536721	0.001695	0.006737	0.015787	3.954564	0.043178	3.82
9	1	2015/1/8	24.23841	15.38181	0.819328	11.91528	14.47387	35.64481	4.269608	0.001585	0.005904	0.013657	3.397715	0.039024	3.11
10	1	2015									27	0.014545	3.541688	0.039508	3.0
11	1	2015/									49	0.01478	3.807623	0.043436	3.7
12	1	2015/									71	0.014655	3.436654	0.038597	2.49
13	1	2015/									41	0.019371	4.35919	0.040535	3.45
14	1	2015/									74	0.01261	3.116639	0.036792	2.71
15	1	2015/1/14	26.1424	10.87304	1.518447	12.78101	13.54828	34.08734	4.431233	0.00167	0.009816	0.024437	5.064583	0.039158	3.21
16	1	2015/1/15	25.35816	13.86131	1.032272	11.59338	11.75655	29.44802	4.140477	0.001463	0.006955	0.016812	3.756926	0.034419	2.93
17	1	2015/1/16	30.60965	12.57977	1.391339	12.47573	16.90393	41.44101	3.285804	0.001653	0.009149	0.022603	4.728387	0.041057	2.72
18	1	2015/1/17	28.98528	14.77666	1.175164	12.95106	13.63876	34.325	5.382655	0.001734	0.007959	0.019132	4.40222	0.041632	3.71
19	1	2015/1/18	23.47092	13.86589	0.569319	11.67795	10.85386	26.77975	3.476924	0.001318	0.004298	0.009647	2.485503	0.030132	2.48
20	1	2015/1/19	26.99603	10.71682	0.681816	11.81375	14.84344	36.13412	3.421585	0.001487	0.005087	0.011547	2.941331	0.036825	2.64
21	1	2015/1/20	24.58778	12.09446	1.023579	10.79391	12.83484	32.45399	5.762554	0.00164	0.007019	0.016673	4.062038	0.041107	3.8
22	1	2015/1/21	25.92405	13.395	1.11307	11.58595	9.630184	24.84265	5.040825	0.001473	0.007371	0.017958	4.000036	0.033728	3.33
23	1	2015/1/22	24.40746	14.65072	1.008589	11.47716	13.01523	32.28896	3.916713	0.001488	0.00686	0.0165	3.723349	0.035804	2.86
24	1	2015/1/23	26.59531	16.104	1.007432	12.66322	15.91896	39.13619	4.210926	0.001686	0.007039	0.016647	3.911348	0.041603	3.16
25	1	2015/1/24	28.07301	15.47606	1.386392	12.38596	16.82913	41.81208	5.054304	0.001833	0.00923	0.022507	5.011072	0.046303	3.70
26	1	2015/1/25	27.516	14.91738	1.592521	11.73306	13.80519	34.96441	5.144004	0.001711	0.010234	0.025533	5.375866	0.041828	3.63
27	1	2015/1/26	24.73965	13.71022	0.621691	11.93635	15.02234	36.67116	3.961989	0.001555	0.004803	0.010633	2.896264	0.038679	2.94
28	1	2015/1/27	25.082	12.96604	1.029371	11.16444	15.08042	37.1881	4.16546	0.001586	0.007062	0.016889	3.915861	0.040036	3.09

concentration | uncertainty | TOT | parameter

Concentration of ambient dataset (ug/m^3)

WFA3 1.0

Input file

Concentration of ambient dataset

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Site	Date	SO4	NO3	Cl	NH4	EC	OC	Al	As	Ba	Br	Ca	Cu	Fe
3	1	2015/1/2	27.58169	14.24344	1.120944	12.3469	13.73474	34.04381	3.893708	0.001557	0.007545	0.018293	4.025165	0.037154	2.89
4	1	2015/1/3	28.17244	17.5012	1.31177	13.16665	15.32911	38.18578	4.804991	0.001772	0.008769	0.021329	4.716187	0.042944	3.48
5	1	2015/1/4	30.22822	12.31878	0.984992	12.97433	15.37807	37.7092	3.725095	0.001615	0.006864	0.016286	3.749026	0.039187	2.86
6	1	2015/1/5	26.97743	9.939551	1.070559	10.93035	15.26339	37.9134	5.02654	0.00167	0.007337	0.017507	4.169257	0.043012	3.58
7	1	2015/1/6	26.95557	13.87623	0.782154	12.6042	12.84461	32.22389	5.55628	0.001667	0.00573	0.013022	3.445838	0.040169	3.74
8	1	2015/1/7	25.11706	12.40496	0.960457	11.15128	14.53584	36.29273	5.536721	0.001695	0.006737	0.015787	3.954564	0.043178	3.82
9	1	2015/1/8	24.23841	15.38181	0.819328	11.91528	14.47387	35.64481	4.269608	0.001585	0.005904	0.013657	3.397715	0.039024	3.11
10	1	2015/1/9	28.31873	10.9218	0.876288	12.04932	14.81842	36.47257	4.209992	0.001594	0.006227	0.014545	3.541688	0.039508	3.0
11	1	2015/1/10	22.71821	11.15734	0.896993	9.986264	14.91354	37.09921	5.462861	0.001652	0.006349	0.01478	3.807623	0.043436	3.7
12	1	2015/1/11	22.29276	1									3.436654	0.038597	2.49
13	1	2015/1/12	30.27722	16									4.35919	0.040535	3.45
14	1	2015/1/13	25.6279	12.88567	0.751524	11.82118	14.48578	35.40184	3.96826	0.001499	0.005474	0.01261	3.116639	0.036792	2.71
15	1	2015/1/14	26.1424	19.87304	1.518447	12.78101	13.54828	34.08734	4.431233	0.00167	0.009816	0.024437	5.064583	0.039158	3.21
16	1	2015/1/15	25.35816	13.86131	1.032272	11.59338	11.75655	29.44802	4.140477	0.001463	0.006955	0.016812	3.756926	0.034419	2.93
17	1	2015/1/16	30.60966	12.57977	1.391339	12.47573	16.90393	41.44101	3.285804	0.001653	0.009149	0.022603	4.728387	0.041057	2.72
18	1	2015/1/17	28.98828	14.77666	1.175164	12.95106	13.63876	34.325	5.382655	0.001734	0.007959	0.019132	4.40222	0.041632	3.71
19	1	2015/1/18	23.47092	13.86589	0.569319	11.67795	10.85386	26.77975	3.476924	0.001318	0.004298	0.009647	2.485503	0.030132	2.48
20	1	2015/1/19	26.99603	10.71682	0.681816	11.81375	14.84344	36.13412	3.421585	0.001487	0.005087	0.011547	2.941331	0.036825	2.64
21	1	2015/1/20	24.58778	12.09446	1.023579	10.79391	12.83484	32.45399	5.762554	0.00164	0.007019	0.016673	4.062038	0.041107	3.8
22	1	2015/1/21	25.92405	13.395	1.11307	11.58595	9.630184	24.84265	5.040825	0.001473	0.007371	0.017958	4.000036	0.033728	3.33
23	1	2015/1/22	24.40746	14.65072	1.008589	11.47716	13.01523	32.28896	3.916713	0.001488	0.00686	0.0165	3.723349	0.035804	2.86
24	1	2015/1/23	26.59531	16.104	1.007432	12.66322	15.91896	39.13619	4.210926	0.001686	0.007039	0.016647	3.911348	0.041603	3.16
25	1	2015/1/24	28.07301	15.47606	1.386392	12.38596	16.82913	41.81208	5.054304	0.001833	0.00923	0.022507	5.011072	0.046303	3.70
26	1	2015/1/25	27.516	14.91738	1.592521	11.73306	13.80519	34.96441	5.144004	0.001711	0.010234	0.025533	5.375866	0.041828	3.63
27	1	2015/1/26	24.73965	13.71022	0.621691	11.93635	15.02234	36.67116	3.961989	0.001555	0.004803	0.010633	2.896264	0.038679	2.94
28	1	2015/1/27	25.082	12.96604	1.029371	11.16444	15.08042	37.1881	4.16546	0.001586	0.007062	0.016889	3.915861	0.040036	3.09

First line: title line

concentration | uncertainty | TOT | parameter

WFA3 1.0

Input file

Concentration of ambient dataset

First column: Sites number

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Site	Date	SO4	NO3	Cl	NH4	EC	OC	Al	As	Ba	Br	Ca	Cu	Fe
2	1	2 15/1/1	26.33127	10.36647	1.102581	10.80773	13.0402	32.89267	5.437436	0.001619	0.007444	0.0179	4.207578	0.040589	3.71
3	1	2 15/1/2	27.58169	14.24344	1.120944	12.3469	13.73474	34.04381	3.893708	0.001557	0.007545	0.018293	4.025165	0.037154	2.89
4	1	2 15/1/3	28.17244	17.50126	1.31177	13.16665	15.32911	38.18578	4.804991	0.001772	0.008769	0.021329	4.716187	0.042944	3.48
5	1	2 15/1/4	30.22822	12.31878	0.984992	12.97433	15.37807	37.7092	3.725095	0.001615	0.006864	0.016286	3.749026	0.039187	2.86
6	1	2 15/1/5	26.97743	9.939551	1.070559	10.93035	15.26339	37.9134	5.02654	0.00167	0.007337	0.017507	4.169257	0.043012	3.58
7	1	2 15/1/6	26.95557	13.87623	0.782154	12.6042	12.84461	32.22389	5.55628	0.001667	0.00573	0.013022	3.445838	0.040169	3.74
8	1	2 15/1/7	25.11706	12.40496	0.960457	11.15128	14.53584	36.29273	5.536721	0.001695	0.006737	0.015787	3.954564	0.043178	3.82
9	1	2 15/1/8	24.23841	15.38181	0.819328	11.91528	14.47387	35.64481	4.269608	0.001585	0.005904	0.013657	3.397715	0.039024	3.11
10	1	2 15/1/9	28.31873	10.9218	0.876288	12.04932	14.81842	36.47257	4.209992	0.001594	0.006227	0.014545	3.541688	0.039508	3.0
11	1	20 5/1/10	22.71821	11.15734	0.896993	9.986264	14.91354	37.09921	5.462861	0.001652	0.006349	0.01478	3.807623	0.043436	3.7
12	1	20 5/1/11								01445	0.006171	0.014655	3.436654	0.038597	2.49
13	1	20 5/1/12								01728	0.008041	0.019371	4.35919	0.040535	3.45
14	1	20 5/1/13	25.6279	12.88567	0.751524	11.82118	14.48578	35.40184	3.96826	0.001499	0.005474	0.01261	3.116639	0.036792	2.71
15	1	20 5/1/14	26.1424	19.87304	1.518447	12.78101	13.54828	34.08734	4.431233	0.00167	0.009816	0.024437	5.064583	0.039158	3.21
16	1	20 5/1/15	25.35816	13.86131	1.032272	11.59338	11.75655	29.44802	4.140477	0.001463	0.006955	0.016812	3.756926	0.034419	2.93
17	1	20 5/1/16	30.60966	12.57977	1.391339	12.47573	16.90393	41.44101	3.285804	0.001653	0.009149	0.022603	4.728387	0.041057	2.72
18	1	20 5/1/17	28.98828	14.77666	1.175164	12.95106	13.63876	34.325	5.382655	0.001734	0.007959	0.019132	4.40222	0.041632	3.71
19	1	20 5/1/18	23.47092	13.86589	0.569319	11.67795	10.85386	26.77975	3.476924	0.001318	0.004298	0.009647	2.485503	0.030132	2.48
20	1	20 5/1/19	26.99603	10.71682	0.681816	11.81375	14.84344	36.13412	3.421585	0.001487	0.005087	0.011547	2.941331	0.036825	2.64
21	1	20 5/1/20	24.58778	12.09446	1.023579	10.79391	12.83484	32.45399	5.762554	0.00164	0.007019	0.016673	4.062038	0.041107	3.8
22	1	20 5/1/21	25.92405	13.395	1.11307	11.58595	9.630184	24.84265	5.040825	0.001473	0.007371	0.017958	4.000036	0.033728	3.33
23	1	20 5/1/22	24.40746	14.65072	1.008589	11.47716	13.01523	32.28896	3.916713	0.001488	0.00686	0.0165	3.723349	0.035804	2.86
24	1	20 5/1/23	26.59531	16.104	1.007432	12.66322	15.91896	39.13619	4.210926	0.001686	0.007039	0.016647	3.911348	0.041603	3.16
25	1	20 5/1/24	28.07301	15.47606	1.386392	12.38596	16.82913	41.81208	5.054304	0.001833	0.00923	0.022507	5.011072	0.046303	3.70
26	1	20 5/1/25	27.516	14.91738	1.592521	11.73306	13.80519	34.96441	5.144004	0.001711	0.010234	0.025533	5.375866	0.041828	3.63
27	1	20 5/1/26	24.73965	13.71022	0.621691	11.93635	15.02234	36.67116	3.961989	0.001555	0.004803	0.010633	2.896264	0.038679	2.94
28	1	20 5/1/27	25.082	12.96604	1.029371	11.16444	15.08042	37.1881	4.16546	0.001586	0.007062	0.016889	3.915861	0.040036	3.09

concentration / uncertainty / TOT / parameter

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Input file

Concentration of ambient dataset

	A		B	C	D	E	F	G	H	I	J	K	L	M	
292	1	20	5/10/18	24.44263	9.777959	0.782947	10.42266	14.3623	35.09489	3.425504	0.001424	0.005578	0.013034	3.162373	0.03
293	1	20	5/10/19	27.18013	18.73404	1.171396	13.42831	13.23851	33.04843	4.280356	0.001631	0.007879	0.019095	4.187729	0.03
294	1	20	5/10/20	26.95838	15.10985	1.193913	12.19567	15.75395	38.64234	3.387492	0.001593	0.008002	0.019505	4.213858	0.03
295	1	20	5/10/21	24.55745	8.647715	1.211897	9.481402	11.43921	28.72892	3.74994	0.001338	0.007831	0.019485	4.108624	0.03
296	1	20	5/10/22	27.53397	9.622309	1.070648	11.00533	17.02161	41.79665	4.356026	0.001677	0.007371	0.017592	4.141912	0.04
297	1	20	5/10/23	27.3077	10.8295	1.002461	11.47726	12.8564	32.22271	4.909241	0.001574	0.006871	0.016379	3.868255	0.03
298	1	20	5/10/24	26.77108	12.62644	1.635667	10.73257	12.84989	32.62204	4.650424	0.001583	0.010363	0.026123	5.350197	0.03
299	1	20	5/10/25	25.60518	9.794657	1.198888	10.06297	19.78372	48.58526	5.196691	0.001856	0.008219	0.019642	4.727128	0.05
300	1	20	5/10/26	26.44153	15.66076	1.119204	12.35118	13.07135	32.68041	4.478842	0.001593	0.007547	0.018236	4.087378	0.03
301	1	20	5/1											1075	0.04
302	2		2015											3789	0.02
303	2		2015											2583	0.01
304	2		2015											3094	0.02
305	2		2015											4513	0.01
306	2		2015/1/5	13.48871	4.969775	0.53528	5.465177	7.631696	18.9567	2.51327	0.000835	0.003668	0.008754	2.084628	0.02
307	2		2015/1/6	13.47779	6.938116	0.391077	6.302099	6.422304	16.11194	2.77814	0.000833	0.002865	0.006511	1.722919	0.02
308	2		2015/1/7	12.55853	6.20248	0.480228	5.575639	7.267921	18.14636	2.768361	0.000848	0.003369	0.007894	1.977282	0.02
309	2		2015/1/8	12.1192	7.690904	0.409664	5.957639	7.236935	17.8224	2.134804	0.000793	0.002952	0.006828	1.698857	0.01
310	2		2015/1/9	14.15936	5.4609	0.438144	6.024662	7.409209	18.23629	2.104996	0.000797	0.003114	0.007272	1.770844	0.01
311	2	2	015/1/10	11.35911	5.578671	0.448497	4.993132	7.45677	18.54961	2.73143	0.000826	0.003175	0.00739	1.903812	0.02
312	2	2	015/1/11	11.14638	5.0248	0.441955	4.737383	8.286536	20.08862	1.485624	0.000722	0.003086	0.007327	1.718327	0.01
313	2	2	015/1/12	15.13861	8.096181	0.593772	6.908877	6.91998	17.32538	2.446459	0.000864	0.00402	0.009686	2.179595	0.02
314	2	2	015/1/13	12.81395	6.442833	0.375762	5.910592	7.24289	17.70092	1.78413	0.000749	0.002737	0.006305	1.55832	0.01
315	2	2	015/1/14	13.0712	9.93652	0.759224	6.390507	6.774142	17.04367	2.215616	0.000835	0.004908	0.012218	2.532292	0.01

The next site is just followed by the last one

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Input file

Concentration of ambient dataset

The second column is the Date

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Site		Date	SO4	NO3	Cl	NH4	EC	OC	Al	As	Ba	Br	Ca	Cu	Fe
2		1	2015/1/1	2	33127	10.36647	1.102581	10.80773	13.0402	32.89267	5.437436	0.001619	0.007444	0.0179	4.207578	0.040589	3.71
3		1	2015/1/2	2	58169	14.24344	1.120944	12.3469	13.73474	34.04381	3.893708	0.001557	0.007545	0.018293	4.025165	0.037154	2.89
4		1	2015/1/3	2	17244	17.50126	1.31177	13.16665	15.32911	38.18578	4.804991	0.001772	0.008769	0.021329	4.716187	0.042944	3.48
5		1	2015/1/4	3	22822	12.31878	0.984992	12.97433	15.37807	37.7092	3.725095	0.001615	0.006864	0.016286	3.749026	0.039187	2.86
6		1	2015/1/5	2	97743	9.939551	1.070559	10.93035	15.26339	37.9134	5.02654	0.00167	0.007337	0.017507	4.169257	0.043012	3.58
7		1	2015/1/6	2	95557	13.87623	0.782154	12.6042	12.84461	32.22389	5.55628	0.001667	0.00573	0.013022	3.445838	0.040169	3.74
8		1	2015/1/7	2	11706	12.40496	0.960457	11.15128	14.53584	36.29273	5.536721	0.001695	0.006737	0.015787	3.954564	0.043178	3.82
9		1	2015/1/8	2	2384									013657	3.397715	0.039024	3.11
10		1	2015/1/9	2	318									014545	3.541688	0.039508	3.0
11		1	2015/1/10	2	718									01478	3.807623	0.043436	3.7
12		1	2015/1/11	2	29276	10.0496	0.883909	9.474767	16.57307	40.17725	2.971248	0.001445	0.006171	0.014655	3.436654	0.038597	2.49
13		1	2015/1/12	3	27722	16.19236	1.187544	13.81775	13.83996	34.65075	4.892918	0.001728	0.008041	0.019371	4.35919	0.040535	3.45
14		1	2015/1/13		5.6279	12.88567	0.751524	11.82118	14.48578	35.40184	3.56826	0.001499	0.005474	0.01261	3.116639	0.036792	2.71
15		1	2015/1/14		6.1424	19.87304	1.518447	12.78101	13.54828	34.08734	4.431233	0.00167	0.009816	0.024437	5.064583	0.039158	3.21
16		1	2015/1/15	2	35816	13.86131	1.032272	11.59338	11.75655	29.44802	4.140477	0.001463	0.006955	0.016812	3.756926	0.034419	2.93
17		1	2015/1/16	3	60966	12.57977	1.391339	12.47573	16.90393	41.44101	3.285804	0.001653	0.009149	0.022603	4.728387	0.041057	2.72
18		1	2015/1/17	2	98828	14.77666	1.175164	12.95106	13.63876	34.325	5.382655	0.001734	0.007959	0.019132	4.40222	0.041632	3.71
19		1	2015/1/18	2	47092	13.86589	0.569319	11.67795	10.85386	26.77975	3.476924	0.001318	0.004298	0.009647	2.485503	0.030132	2.48
20		1	2015/1/19	2	99603	10.71682	0.681816	11.81375	14.84344	36.13412	3.421585	0.001487	0.005087	0.011547	2.941331	0.036825	2.64
21		1	2015/1/20	2	58778	12.09446	1.023579	10.79391	12.83484	32.45399	5.762554	0.00164	0.007019	0.016673	4.062038	0.041107	3.8
22		1	2015/1/21	2	92405	13.395	1.11307	11.58595	9.630184	24.84265	5.040825	0.001473	0.007371	0.017958	4.000036	0.033728	3.33
23		1	2015/1/22	2	40746	14.65072	1.008589	11.47716	13.01523	32.28896	3.916713	0.001488	0.00686	0.0165	3.723349	0.035804	2.86
24		1	2015/1/23	2	59531	16.104	1.007432	12.66322	15.91896	39.13619	4.210926	0.001686	0.007039	0.016647	3.911348	0.041603	3.16
25		1	2015/1/24	2	07301	15.47606	1.386392	12.38596	16.82913	41.81208	5.054304	0.001833	0.00923	0.022507	5.011072	0.046303	3.70
26		1	2015/1/25		27.516	14.91738	1.592521	11.73306	13.80519	34.96441	5.144004	0.001711	0.010234	0.025533	5.375866	0.041828	3.63
27		1	2015/1/26	2	73965	13.71022	0.621691	11.93635	15.02234	36.67116	3.961989	0.001555	0.004803	0.010633	2.896264	0.038679	2.94
28		1	2015/1/27		25.082	12.96604	1.029371	11.16444	15.08042	37.1881	4.16546	0.001586	0.007062	0.016889	3.915861	0.040036	3.09

concentration / uncertainty / TOT / parameter

WFA3 1.0

Input file

Concentration of ambient dataset

The second column is the Date

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Site		Date	SO4	NO3	Cl	NH4	EC	OC	Al	As	Ba	Br	Ca	Cu	Fe
2		1	2015/1/1	2	33127	10.36647	1.102581	10.80773	13.0402	32.89267	5.437436	0.001619	0.007444	0.0179	4.207578	0.040589	3.71
3		1	2015/1/2	2	58169	14.24344	1.120944	12.3469	13.73474	34.04381	3.893708	0.001557	0.007545	0.018293	4.025165	0.037154	2.89
4		1	2015/1/3	2	17244	17.50126	1.31177	13.16665	15.32911	38.18578	4.804991	0.001772	0.008769	0.021329	4.716187	0.042944	3.48
5		1	2015/1/4	3	22822	12.31878	0.984992	12.97433	15.37807	37.7092	3.725095	0.001615	0.006864	0.016286	3.749026	0.039187	2.86
6		1	2015/1/5	2	97743	9.939551	1.070559	10.93035	15.26339	37.9134	5.02654	0.00167	0.007337	0.017507	4.169257	0.043012	3.58
7		1	2015/1/6	2	95557	13.87623	0.782154	12.6042	12.84461	32.22389	5.55628	0.001667	0.00573	0.013022	3.445838	0.040169	3.74
8		1	2015/1/7	2	11706	12.40496	0.960457	11.15128	14.53584	36.29273	5.536721	0.001695	0.006737	0.015787	3.954564	0.043178	3.82
9		1	2015/1/8	2	2384									013657	3.397715	0.039024	3.11
10		1	2015/1/9	2	318									014545	3.541688	0.039508	3.0
11		1	2015/1/10	2	718									01478	3.807623	0.043436	3.7
12		1	2015/1/11	2	29276	10.0496	0.883909	9.474767	16.57307	40.17725	2.971248	0.001445	0.006171	0.014655	3.436654	0.038597	2.49
13		1	2015/1/12	3	27722	16.19236	1.187544	13.81775	13.83996	34.65075	4.892918	0.001728	0.008041	0.019371	4.35919	0.040535	3.45
14		1	2015/1/13		5.6279	12.88567	0.751524	11.82118	14.48578	35.40184	3.56826	0.001499	0.005474	0.01261	3.116639	0.036792	2.71
15		1	2015/1/14		6.1424	19.87304	1.518447	12.78101	13.54828	34.08734	4.431233	0.00167	0.009816	0.024437	5.064583	0.039158	3.21
16		1	2015/1/15	2	35816	13.86131	1.032272	11.59338	11.75655	29.44802	4.140477	0.001463	0.006955	0.016812	3.756926	0.034419	2.93
17		1	2015/1/16	3	60966	12.57977	1.391339	12.47573	16.90393	41.44101	3.285804	0.001653	0.009149	0.022603	4.728387	0.041057	2.72
18		1	2015/1/17	2	98828	14.77666	1.175164	12.95106	13.63876	34.325	5.382655	0.001734	0.007959	0.019132	4.40222	0.041632	3.71
19		1	2015/1/18	2	47092	13.86589	0.569319	11.67795	10.85386	26.77975	3.476924	0.001318	0.004298	0.009647	2.485503	0.030132	2.48
20		1	2015/1/19	2	99603	10.71682	0.681816	11.81375	14.84344	36.13412	3.421585	0.001487	0.005087	0.011547	2.941331	0.036825	2.64
21		1	2015/1/20	2	58778	12.09446	1.023579	10.79391	12.83484	32.45399	5.762554	0.00164	0.007019	0.016673	4.062038	0.041107	3.8
22		1	2015/1/21	2	92405	13.395	1.11307	11.58595	9.630184	24.84265	5.040825	0.001473	0.007371	0.017958	4.000036	0.033728	3.33
23		1	2015/1/22	2	40746	14.65072	1.008589	11.47716	13.01523	32.28896	3.916713	0.001488	0.00686	0.0165	3.723349	0.035804	2.86
24		1	2015/1/23	2	59531	16.104	1.007432	12.66322	15.91896	39.13619	4.210926	0.001686	0.007039	0.016647	3.911348	0.041603	3.16
25		1	2015/1/24	2	07301	15.47606	1.386392	12.38596	16.82913	41.81208	5.054304	0.001833	0.00923	0.022507	5.011072	0.046303	3.70
26		1	2015/1/25		27.516	14.91738	1.592521	11.73306	13.80519	34.96441	5.144004	0.001711	0.010234	0.025533	5.375866	0.041828	3.63
27		1	2015/1/26	2	73965	13.71022	0.621691	11.93635	15.02234	36.67116	3.961989	0.001555	0.004803	0.010633	2.896264	0.038679	2.94
28		1	2015/1/27		25.082	12.96604	1.029371	11.16444	15.08042	37.1881	4.16546	0.001586	0.007062	0.016889	3.915861	0.040036	3.09

concentration / uncertainty / TOT / parameter

WFA3 1.0

Input file

Concentration of ambient dataset

	Site	Date	SO4	NO3	Cl	NH4	EC	OC	Al	As	Ba	Br	Ca
1	Site	Date	SO4	NO3	Cl	NH4	EC	OC	Al	As	Ba	Br	Ca
2	1	2015/1/1	26.33127	10.36647	1.102581	10.80773	13.0402	32.89267	5.437436	0.001619	0.007444	0.0179	4.2
3	1	[illegible]	[illegible]	14.24344	1.120944	12.3469	13.73474	34.04381	3.893708	0.001557	0.007545	0.018293	4.(
4	1	2015/1/3	28.17244	17.50126	1.31177	13.16665	15.32911	38.18578	4.804991	0.001772	0.008769	0.021329	4.7
5	1	2015/1/4	30.22822	12.								286	3.7
6	1	2015/1/5	26.97743	9.9								507	4.1
7	1	2015/1/6	26.95557	13.								922	3.9
298	1	2015/10/24	26.77108	12.								6123	5
299	1	2015/10/25	25.60518	9.								9642	4
300	1	2015/10/26	26.44153	15.								8236	4
301	1	2015/10/27	25.	671	11.							8891	4
302	2	2015/1/1	13.1	564	5.183234	0.55129	5.403863	6.520098	16.44633	2.718718	0.000809	0.003722	0.00895	2
303	2	2015/1/2	13.7	084	7.12172	0.560472	6.17345	6.867368	17.02191	1.946854	0.000779	0.003773	0.009147	2
304	2	2015/1/3	14.08622	8.75063	0.655885	6.583326	7.664553	19.09289	2.402496	0.000886	0.004385	0.010665	2
305	2	2015/1/4	15.11411	6.159391	0.492496	6.487163	7.689036	18.8546	1.862548	0.000807	0.003432	0.008143	1
306	2	2015/1/5	13.4	871	4.969775	0.53528	5.465177	7.631696	18.9567	2.51327	0.000835	0.003668	0.008754	2
307	2	2015/1/6	13.4	779	6.938								1	1
308	2	2015/1/7	12.5	853	6.20								4	1
594	2	2015/10/20	13.47919	7.55									753	
595	2	2015/10/21	12.27872	4.32									743	
596	2	2015/10/22	13.76699	4.81									796	
597	2	2015/10/23	13.65385	5.414751	0.50123	5.738629	6.428199	16.11136	2.454621	0.000787	0.003436	0.0081		
598	2	2015/10/24	13.38554	6.313221	0.817834	5.366284	6.424943	16.31102	2.325212	0.000791	0.005182	0.01306		
599	2	2015/10/25	12.80259	4.897329	0.599444	5.031485	9.89186	24.29263	2.598345	0.000928	0.00411	0.00982		
600	2	2015/10/26	13.2077	7.83038	0.559602	6.175589	6.535675	16.3402	2.239421	0.000796	0.003774	0.009118		
601	2	2015/10/27	12.93355	5.926531	0.576906	5.440325	8.856039	21.91379	2.756652	0.000916	0.003968	0.009445		
602														

The numbers of the samples for all the sites must be the same; the samples should from all the sites should be sampling simultaneous

In the example file, there are two sites: 300 samples for each; from 2015/1/1-2015/10/27

WFA3 1.0

Input file

Concentration of ambient dataset

The concentrations of the species

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Site	Date	SO4	NO3	Cl	NH4	EC	OC	Al	As	Ba	Br	Ca	Cu	Fe
2	1	2015/1/1	26.33127	10.36647	1.102581	10.80773	13.0402	32.89267	5.437436	0.001619	0.007444	0.0179	4.207578	0.040589	3.71
3	1	2015/1/2	27.58169	14.24344	1.120944	12.3469	13.73474	34.04381	3.893708	0.001557	0.007545	0.018293	4.025165	0.037154	2.89
4	1	2015/1/3	28.17244	17.50126	1.31177	13.16665	15.32911	38.18578	4.804991	0.001772	0.008769	0.021329	4.716187	0.042944	3.48
5	1	2015/1/4	30.22822	12.31878	0.984992	12.97433	15.37807	37.7092	3.725095	0.001615	0.006864	0.016286	3.749026	0.039187	2.86
6	1	2015/1/5	26.97743	9.939551	1.070559	10.93035	15.26339	37.9134	5.02654	0.00167	0.007337	0.017507	4.169257	0.043012	3.58
7	1	2015/1/6	26.95557	13.87623	0.782154	12.6042	12.84461	32.22389	5.55628	0.001667	0.00573	0.013022	3.445838	0.040169	3.74
8	1	2015/1/7	25.11706	12.40496	0.960457	11.15128	14.53584	36.29273	5.536721	0.001695	0.006737	0.015787	3.954564	0.043178	3.82
9	1	2015/1/8	24.2384	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.013657	3.397715	0.039024	3.11
10	1	2015/1/9	28.318	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	014545	3.541688	0.039508	3.0
11	1	2015/1/10	22.718	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.01478	3.807623	0.043436	3.7
12	1	2015/1/11	22.292	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	014655	3.436654	0.038597	2.49
13	1	2015/1/12	30.277	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	019371	4.35919	0.040535	3.45
14	1	2015/1/13	25.627	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.01261	3.116639	0.036792	2.71
15	1	2015/1/14	26.1424	19.87304	1.518447	12.78101	13.54828	34.08734	4.431233	0.00167	0.009816	0.024437	5.064583	0.039158	3.21
16	1	2015/1/15	25.35816	13.86131	1.032272	11.59338	11.75655	29.44802	4.140477	0.001463	0.006955	0.016812	3.756926	0.034419	2.93
17	1	2015/1/16	30.60966	12.57977	1.391339	12.47573	16.90393	41.44101	3.285804	0.001653	0.009149	0.022603	4.728387	0.041057	2.72
18	1	2015/1/17	28.98828	14.77666	1.175164	12.95106	13.63876	34.325	5.382655	0.001734	0.007959	0.019132	4.40222	0.041632	3.71
19	1	2015/1/18	23.47092	13.86589	0.569319	11.67795	10.85386	26.77975	3.476924	0.001318	0.004298	0.009647	2.485503	0.030132	2.48
20	1	2015/1/19	26.99603	10.71682	0.681816	11.81375	14.84344	36.13412	3.421585	0.001487	0.005087	0.011547	2.941331	0.036825	2.64
21	1	2015/1/20	24.58778	12.09446	1.023579	10.79391	12.83484	32.45399	5.762554	0.00164	0.007019	0.016673	4.062038	0.041107	3.8
22	1	2015/1/21	25.92405	13.395	1.11307	11.58595	9.630184	24.84265	5.040825	0.001473	0.007371	0.017958	4.000036	0.033728	3.33
23	1	2015/1/22	24.40746	14.65072	1.008589	11.47716	13.01523	32.28896	3.916713	0.001488	0.00686	0.0165	3.723349	0.035804	2.86
24	1	2015/1/23	26.59531	16.104	1.007432	12.66322	15.91896	39.13619	4.210926	0.001686	0.007039	0.016647	3.911348	0.041603	3.16
25	1	2015/1/24	28.07301	15.47606	1.386392	12.38596	16.82913	41.81208	5.054304	0.001833	0.00923	0.022507	5.011072	0.046303	3.70
26	1	2015/1/25	27.516	14.91738	1.592521	11.73306	13.80519	34.96441	5.144004	0.001711	0.010234	0.025533	5.375866	0.041828	3.63
27	1	2015/1/26	24.73965	13.71022	0.621691	11.93635	15.02234	36.67116	3.961989	0.001555	0.004803	0.010633	2.896264	0.038679	2.94
28	1	2015/1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

concentration | uncertainty | TOT | parameter

WFA3 1.0

Input file

1	SO4	NO3	Cl	NH4	EC	OC	Al	As	Ba	Br	Ca	Cu
2	2.633127	1.036647	0.110258	1.080773	1.30402	3.289267	0.543744	0.000162	0.000744	0.00179	0.420758	0.00405
3	2.758169	1.424344	0.112094	1.23469	1.373474	3.404381	0.389371	0.000156	0.000755	0.001829	0.402517	0.00371
4	2.817244	1.750126	0.131177	1.316665	1.532911	3.818578	0.480499	0.000177	0.000877	0.002133	0.471619	0.00429
5	3.022822	1.23187									0.374903	0.00391
6	2.697743	0.99395									0.416926	0.00430
7	2.695557	1.38762									0.344584	0.00401
8	2.511706	1.24049									0.395456	0.00431
9	2.423841	1.53818									0.339771	0.00390
10	2.831873	1.09218	0.087629	1.204932	1.481842	3.647257	0.420999	0.000159	0.000623	0.001454	0.354169	0.00395
11	2.271821	1.115734	0.089699	0.998626	1.491354	3.709921	0.546286	0.000165	0.000635	0.001478	0.380762	0.00434
12	2.229276	1.00496	0.088391	0.947477	1.657307	4.017725	0.297125	0.000144	0.000617	0.001465	0.343665	0.0038
13	3.027722	1.619236	0.118754	1.381775	1.383996	3.465075	0.489292	0.000173	0.000804	0.001937	0.435919	0.00405
14	2.56279	1.288567	0.075152	1.182118	1.448578	3.540184	0.356826	0.00015	0.000547	0.001261	0.311664	0.00367
15	2.61424	1.987304	0.151845	1.278101	1.354828	3.408734	0.443123	0.000167	0.000982	0.002444	0.506458	0.00391
16	2.535816	1.386131	0.103227	1.159338	1.175655	2.944802	0.414048	0.000146	0.000696	0.001681	0.375693	0.00344
17	3.060966	1.257977	0.139134	1.247573	1.690393	4.144101	0.32858	0.000165	0.000915	0.00226	0.472839	0.00410
18	2.898828	1.477666	0.117516	1.295106	1.363876	3.4325	0.538265	0.000173	0.000796	0.001913	0.440222	0.00416
19	2.347092	1.386589	0.056932	1.167795	1.085386	2.677975	0.347692	0.000132	0.00043	0.000965	0.24855	0.00301
20	2.699603	1.071682	0.068182	1.181375	1.484344	3.613412	0.342159	0.000149	0.000509	0.001155	0.294133	0.00368
21	2.458778	1.209446	0.102358	1.079391	1.283484	3.245399	0.576255	0.000164	0.000702	0.001667	0.406204	0.00411
22	2.592405	1.3395	0.111307	1.158595	0.963018	2.484265	0.504083	0.000147	0.000737	0.001796	0.400004	0.00337
23	2.440746	1.465072	0.100859	1.147716	1.301523	3.228896	0.391671	0.000149	0.000686	0.00165	0.372335	0.0035
24	2.659531	1.6104	0.100743	1.266322	1.591896	3.913619	0.421093	0.000169	0.000704	0.001665	0.391135	0.0041
25	2.807301	1.547606	0.138639	1.238596	1.682913	4.181208	0.50543	0.000183	0.000923	0.002251	0.501107	0.0046
26	2.7516	1.491738	0.159252	1.173306	1.380519	3.496441	0.5144	0.000171	0.001023	0.002553	0.537587	0.00418
27	2.473965	1.371022	0.062169	1.193635	1.502234	3.667116	0.396199	0.000156	0.00048	0.001063	0.289626	0.00386
28	2.5082	1.296604	0.102937	1.116444	1.508042	3.71881	0.416546	0.000159	0.000706	0.001689	0.391586	0.00400

Uncertainties of concentration for PM (Unit: ug/m^3)

concentration | uncertainty | TOT | parameter

WFA3 1.0

Input file

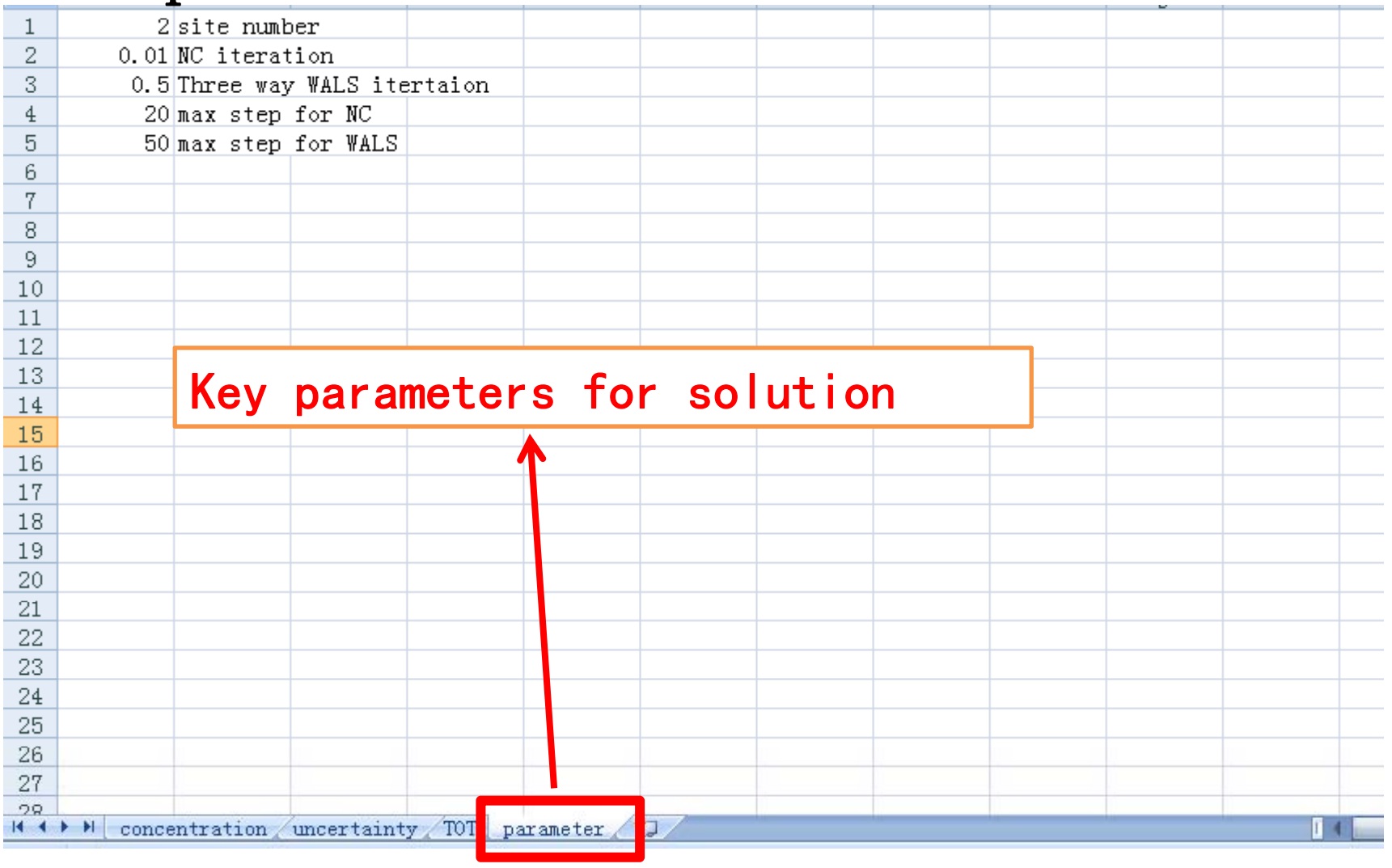
	A	B	C	D	E	F	G	H	I	J	K
1	TOT										
2	161.895										
3	155.7397										
4	177.1812										
5	161.4602										
6	167.0179										
7	166.6873										
8	169.5329										
9	158.5211										
10	159.357										
11	165.2131										
12	144.4818										
13	172.8096										
14	149.8812										
15	167.005										
16	146.3479										
17	165.3477										
18	173.3532										
19	131.8324										
20	148.7081										
21	163.9603										
22	147.2896										
23	148.841										
24	168.5917										
25	183.3431										
26	171.0662										
27	155.5296										
28	158.6406										

concentration | uncertainty | TOT | parameter

Concentration of total mass of PM (TOT) (Unit: ug/m^3)

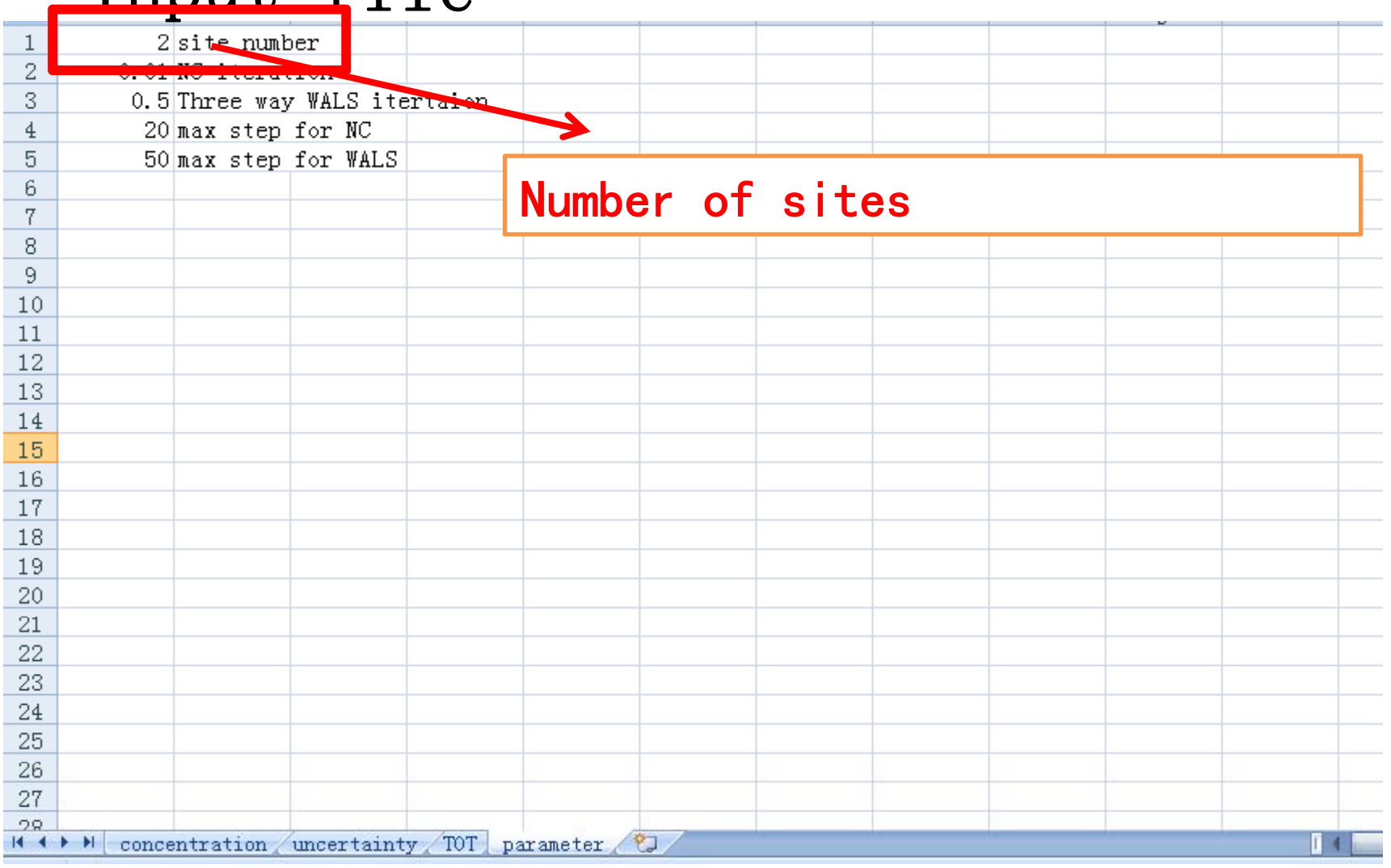
WFA3 1.0

Input file



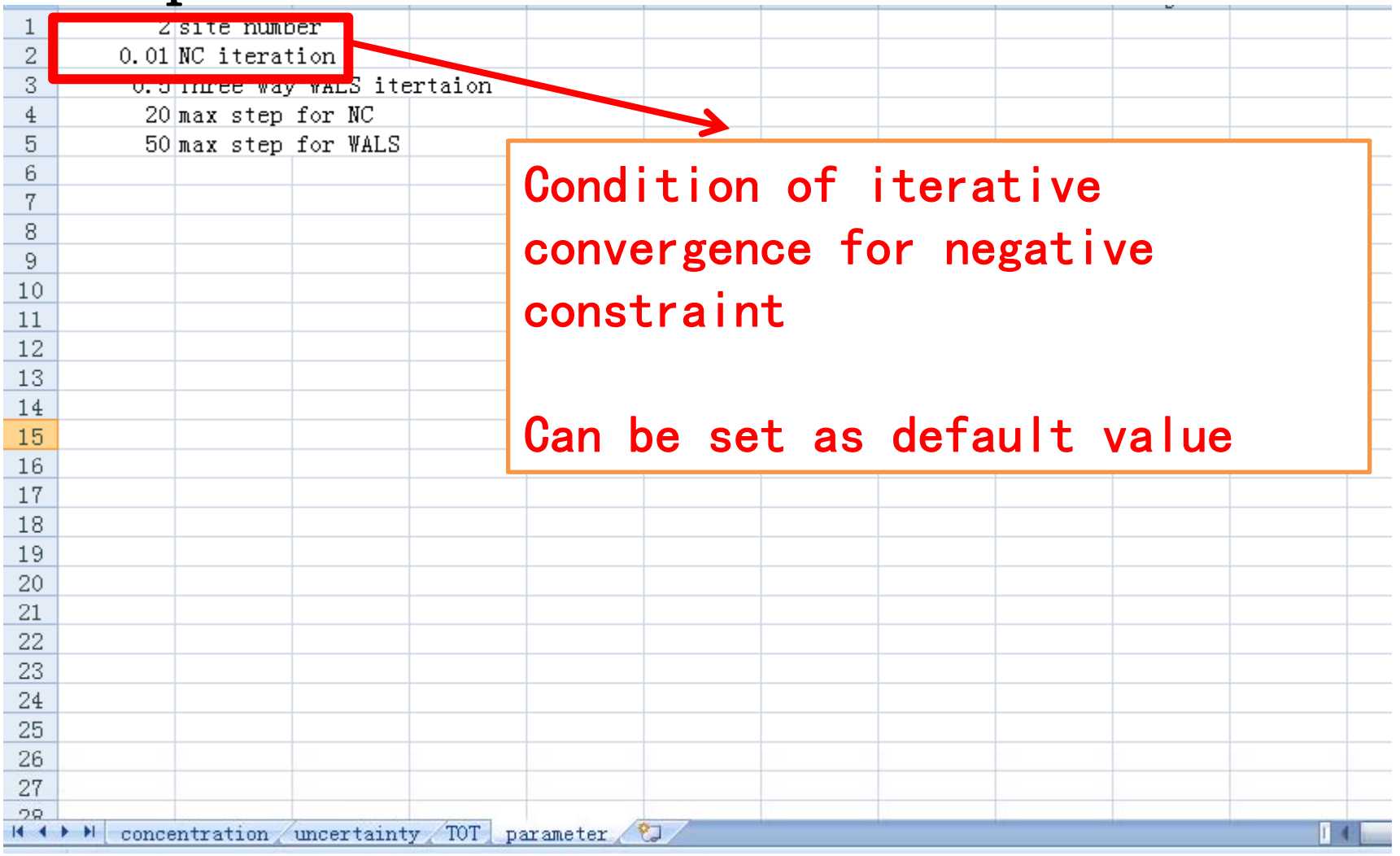
WFA3 1.0

Input file



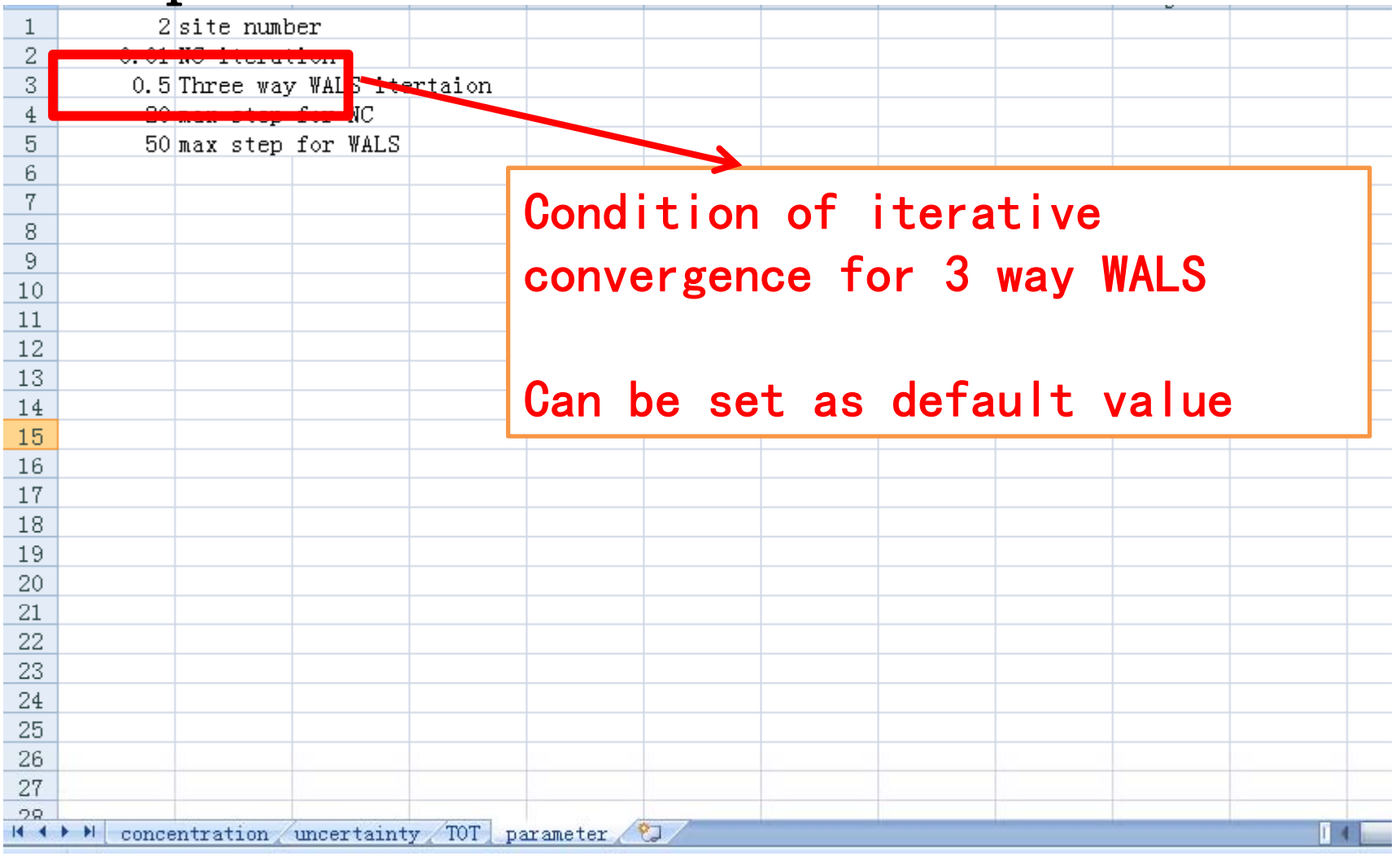
WFA3 1.0

Input file



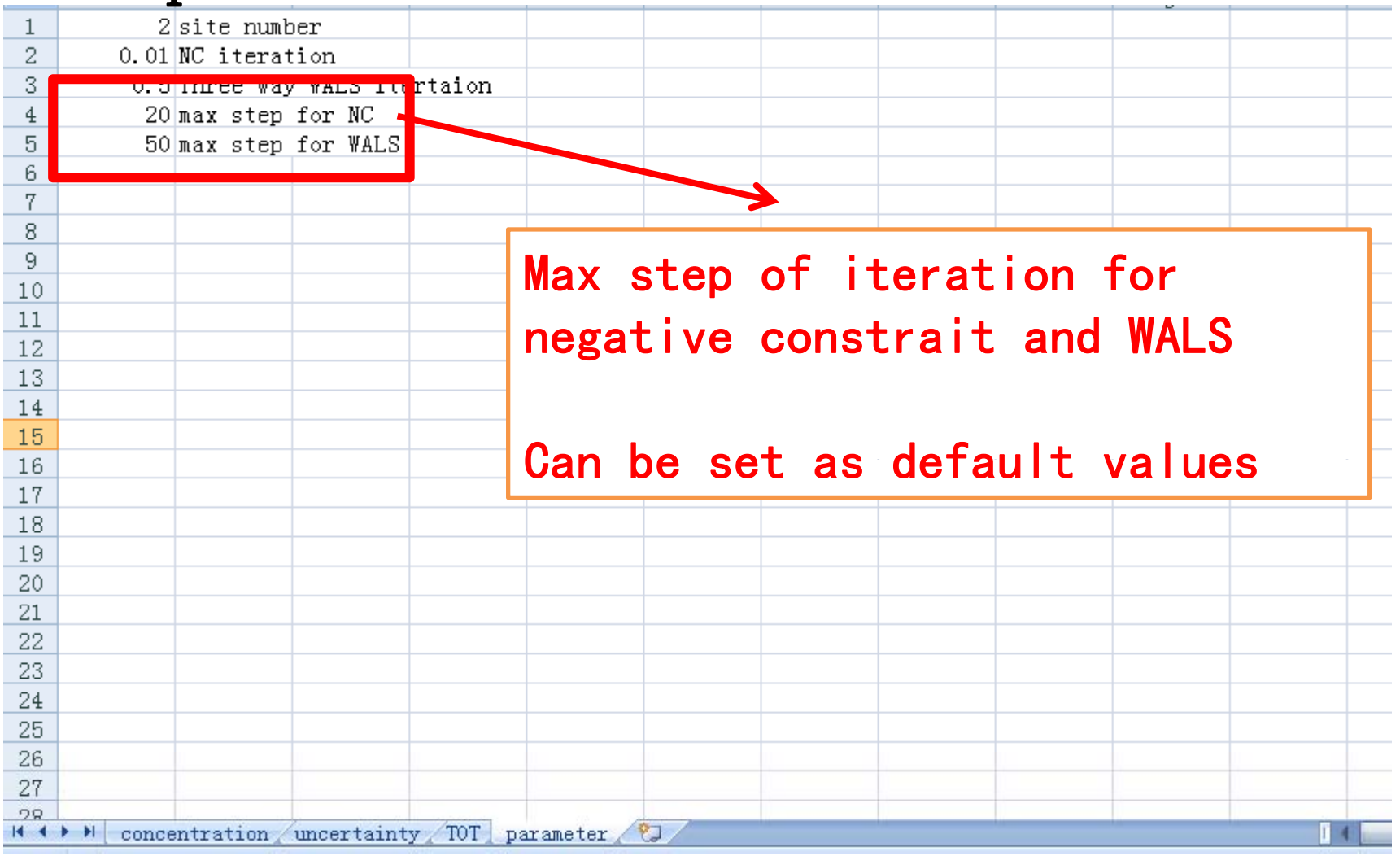
WFA3 1.0

Input file

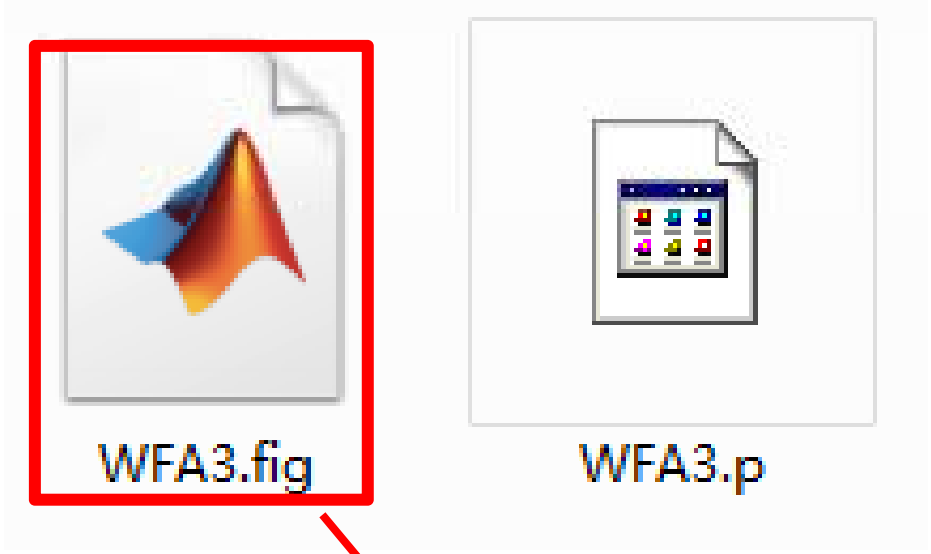


WFA3 1.0

Input file



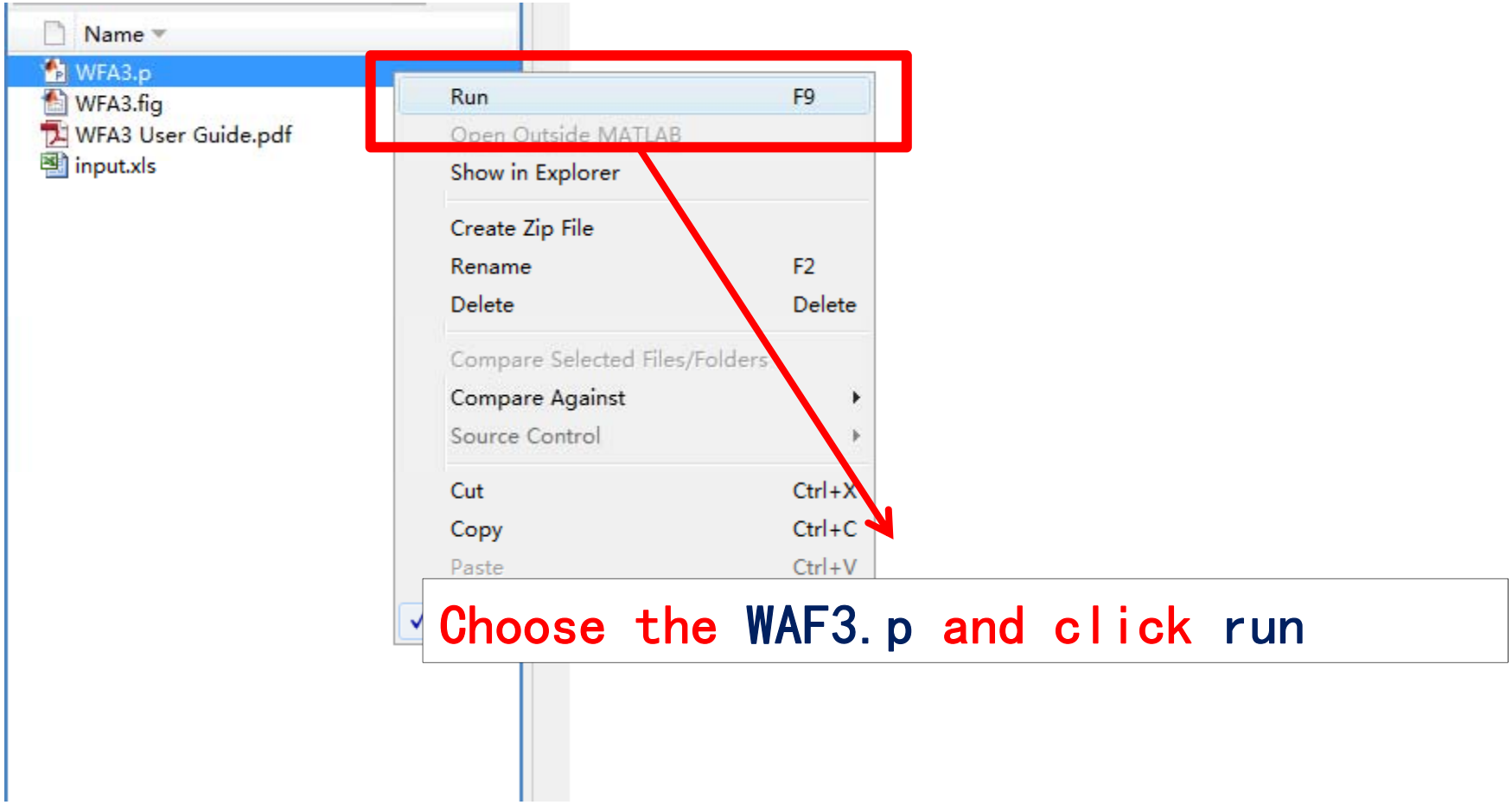
WFA3 1.0



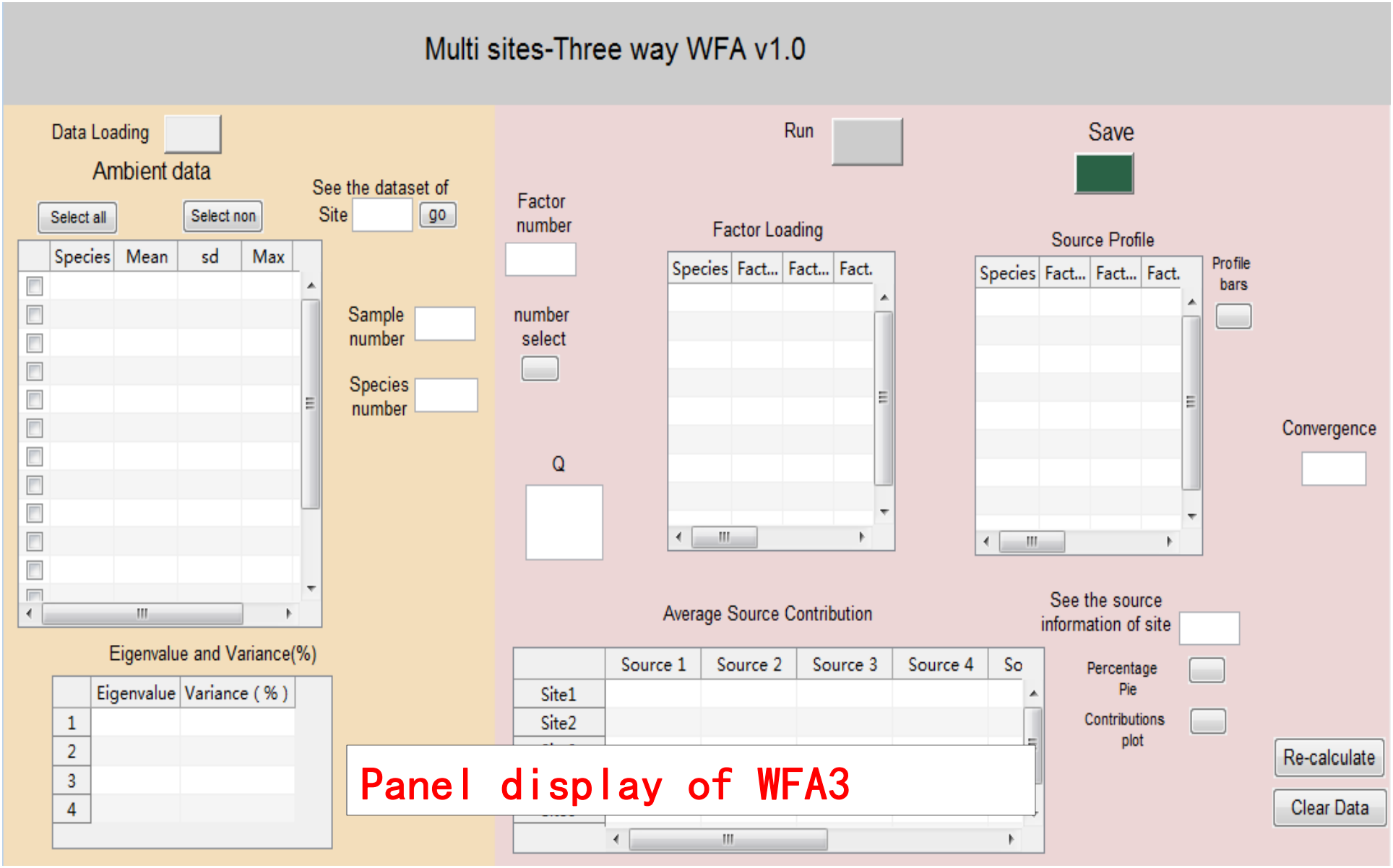
Double click the WFA3.fig file

WFA3 1.0

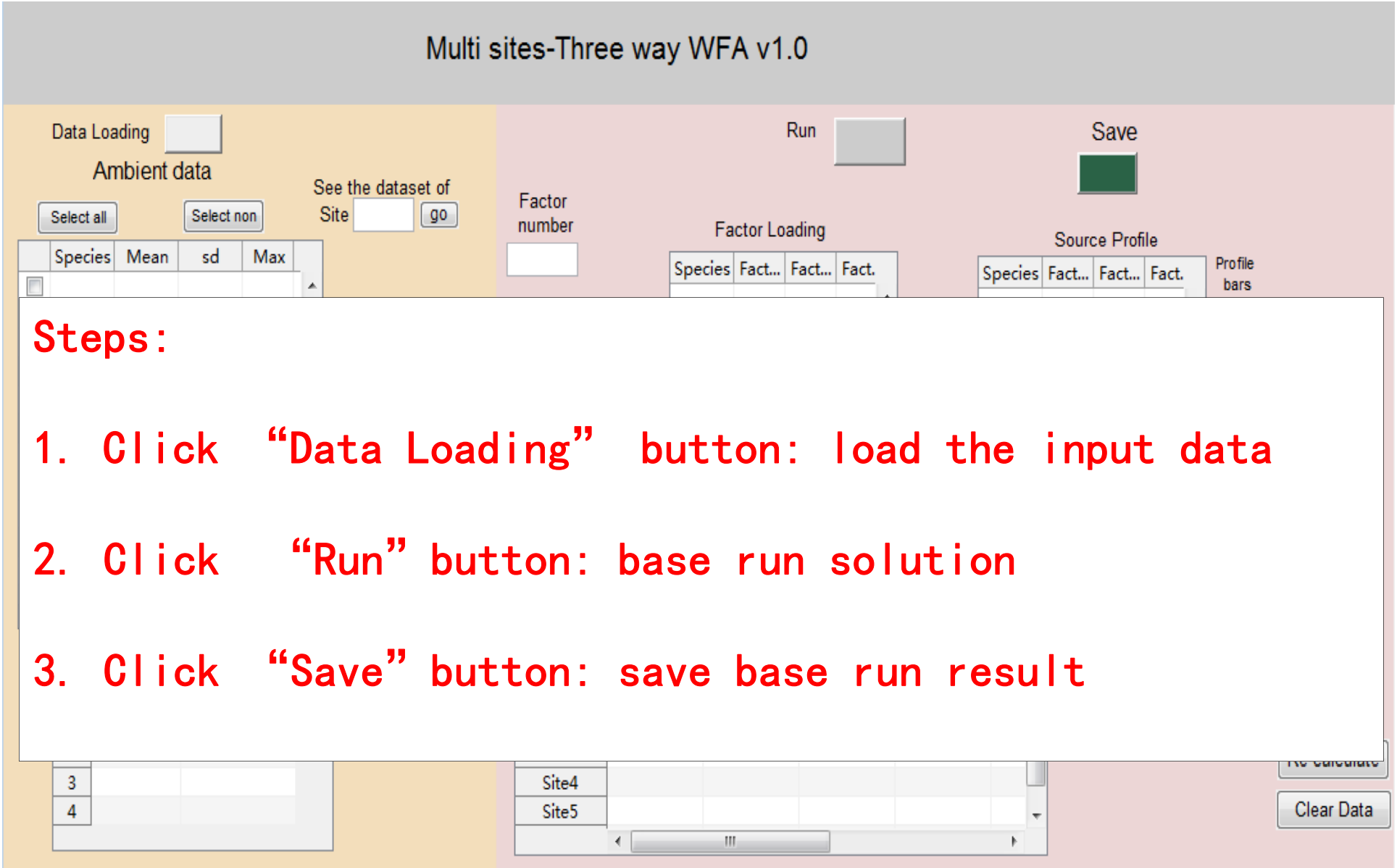
- Run the model



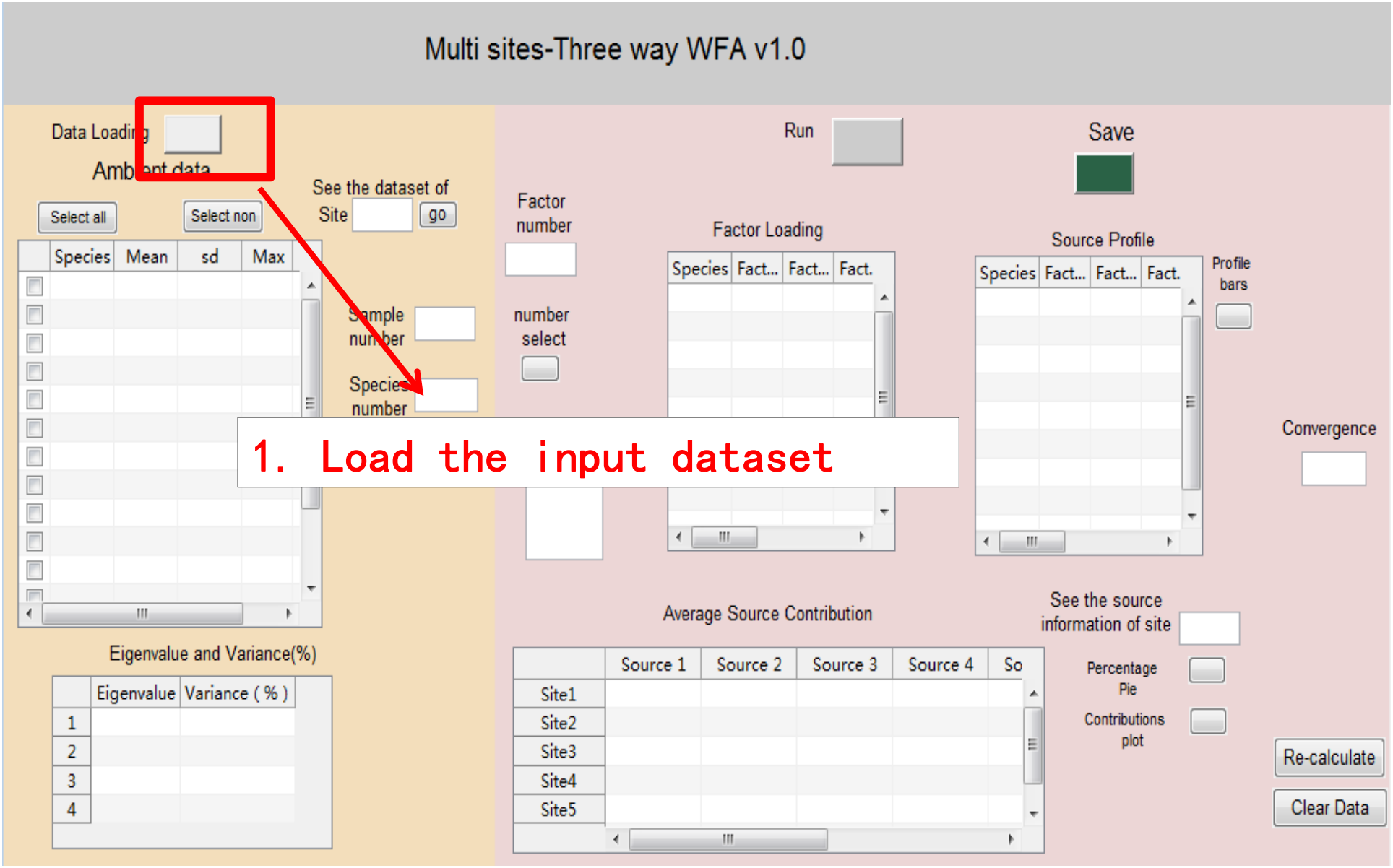
WFA3 1.0


Multi sites-Three way WFA v1.0
Data Loading
Ambient data
Select all
Select non
See the dataset of
Site
go
Species
Mean
sd
Max
Sample number
Species number
Factor number
number select
Q
Run
Save
Factor Loading
Species
Fact...
Fact...
Fact.
Source Profile
Profile bars
Convergence
Eigenvalue and Variance(%)
Eigenvalue
Variance (%)
1
2
3
4
Average Source Contribution
Source 1
Source 2
Source 3
Source 4
So
Site1
Site2
See the source information of site
Percentage Pie
Contributions plot
Re-calculate
Clear Data
Panel display of WFA3

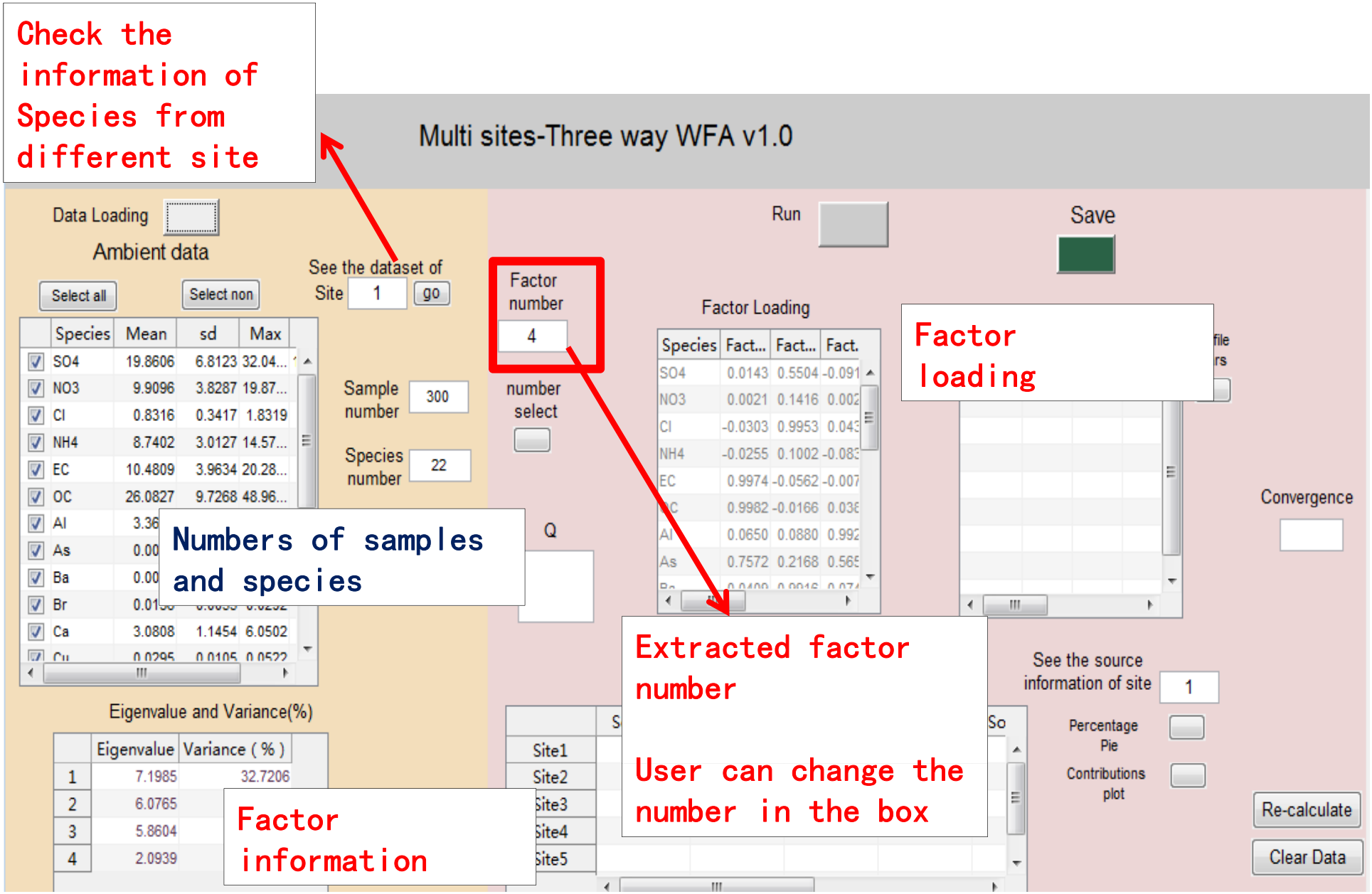
WFA3 1.0


Multi sites-Three way WFA v1.0
Data Loading
Ambient data
Select all
Select non
See the dataset of
Site
go
Species
Mean
sd
Max
Factor
number
Run
Factor Loading
Species
Fact...
Fact...
Fact.
Save
Source Profile
Species
Fact...
Fact...
Fact.
Profile
bars
Steps:
1. Click “Data Loading” button: load the input data
2. Click “Run” button: base run solution
3. Click “Save” button: save base run result
3
4
Site4
Site5
Clear Data

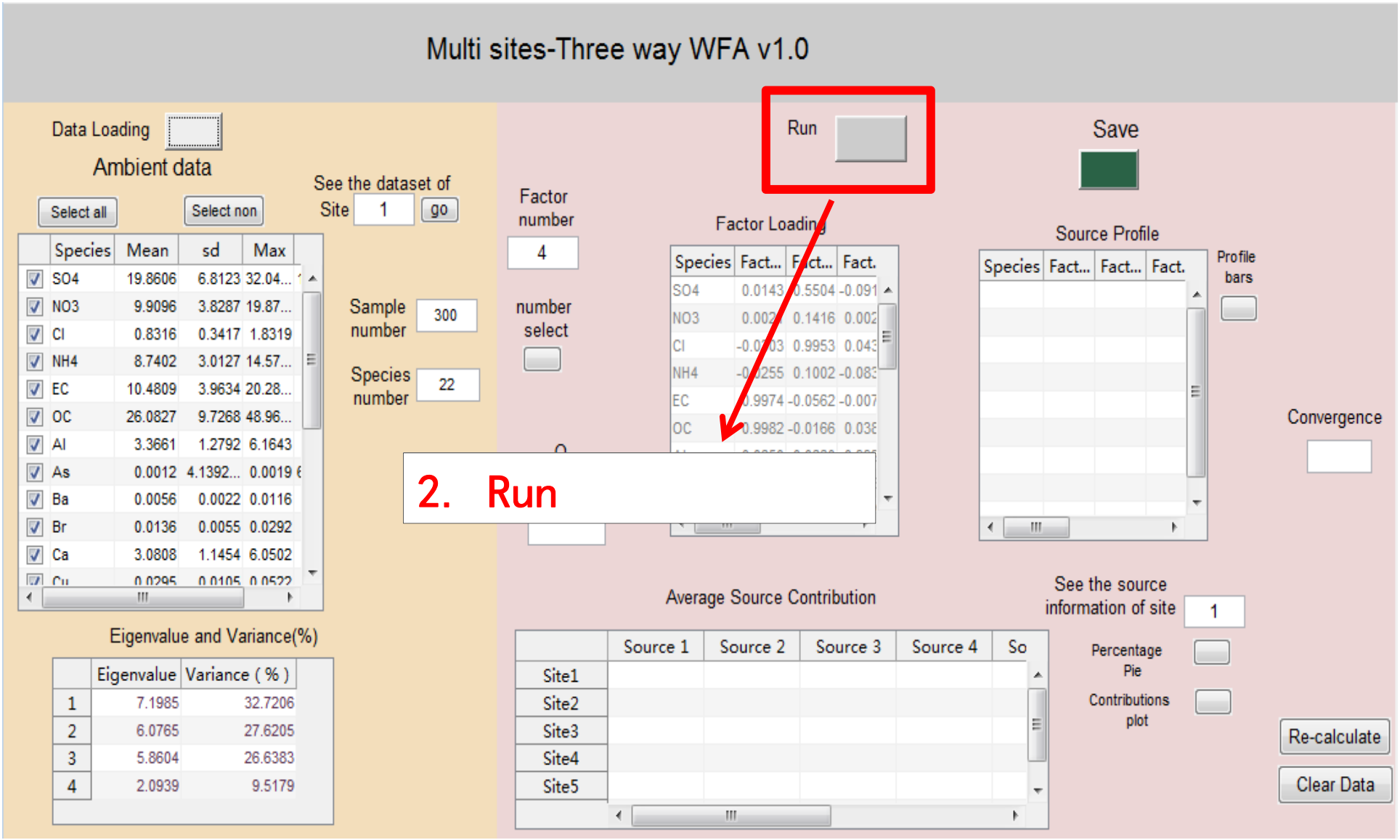
WFA3 1.0


Multi sites-Three way WFA v1.0
Data Loading
Ambient data
Select all
Select non
Species
Mean
sd
Max
See the dataset of
Site
go
Sample number
Species number
Factor number
number select
Run
Save
Factor Loading
Species
Fact...
Fact...
Fact.
Source Profile
Profile bars
Convergence
1. Load the input dataset
Eigenvalue and Variance(%)
Eigenvalue
Variance (%)
Average Source Contribution
Source 1
Source 2
Source 3
Source 4
Site1
Site2
Site3
Site4
Site5
See the source information of site
Percentage Pie
Contributions plot
Re-calculate
Clear Data

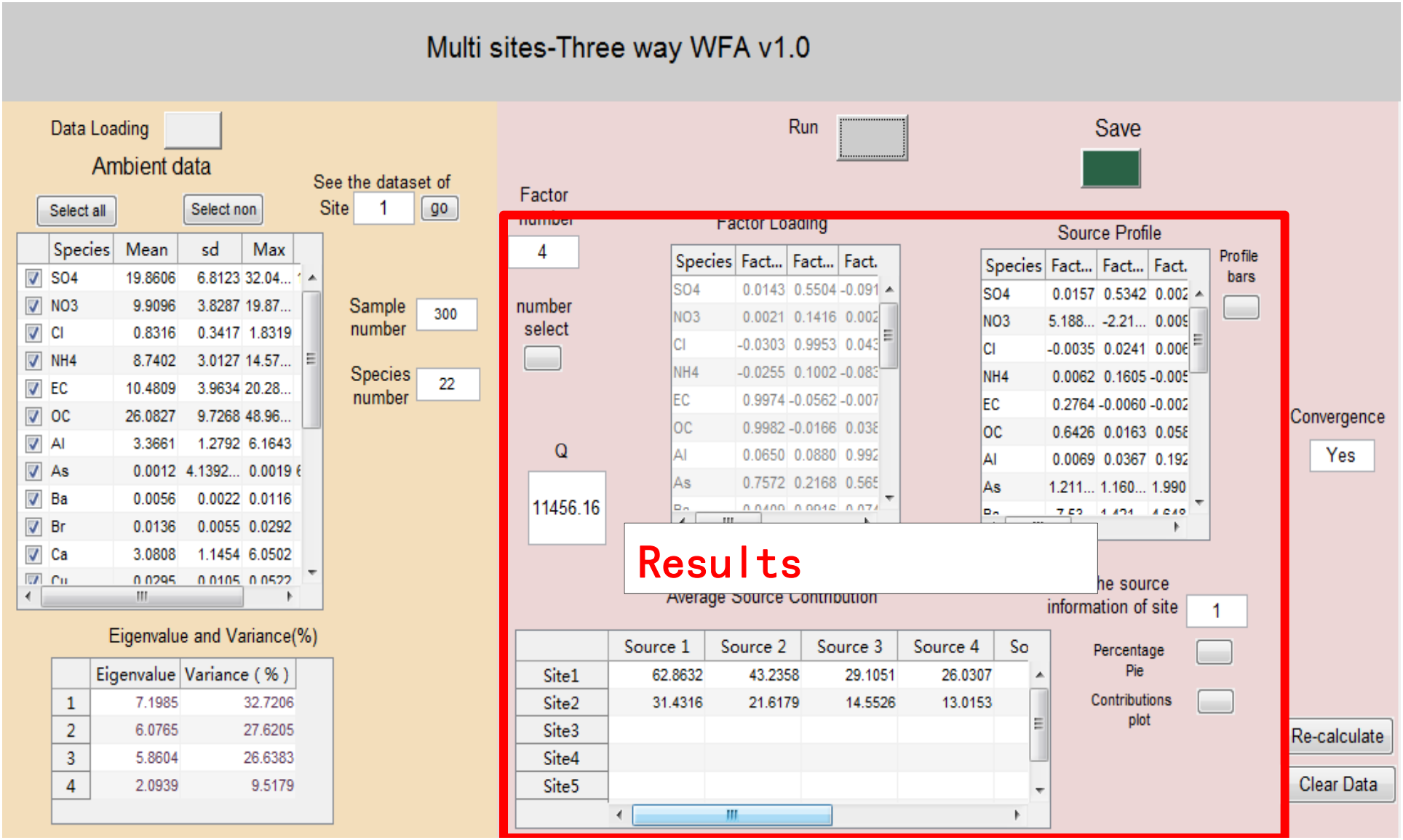
WFA3 1.0


Check the information of Species from different site
Multi sites-Three way WFA v1.0
Data Loading
Ambient data
Select all
Select non
See the dataset of Site
1
go
Species Mean sd Max
SO4 19.8606 6.8123 32.04...
NO3 9.9096 3.8287 19.87...
Cl 0.8316 0.3417 1.8319
NH4 8.7402 3.0127 14.57...
EC 10.4809 3.9634 20.28...
OC 26.0827 9.7268 48.96...
Al 3.36
As 0.00
Ba 0.00
Br 0.01
Ca 3.0808 1.1454 6.0502
Cu 0.0295 0.0105 0.0522
Sample number
300
Species number
22
Numbers of samples and species
Factor number
4
number select
Q
Run
Save
Factor Loading
Species Fact... Fact... Fact.
SO4 0.0143 0.5504 -0.091
NO3 0.0021 0.1416 0.002
Cl -0.0303 0.9953 0.043
NH4 -0.0255 0.1002 -0.083
EC 0.9974 -0.0562 -0.007
0.9982 -0.0166 0.038
Al 0.0650 0.0880 0.992
As 0.7572 0.2168 0.565
Factor loading
Convergence
Extracted factor number
User can change the number in the box
See the source information of site
1
Percentage Pie
Contributions plot
Re-calculate
Clear Data
Eigenvalue and Variance(%)
Eigenvalue Variance (%)
1 7.1985 32.7206
2 6.0765
3 5.8604
4 2.0939
Factor information
Site1
Site2
Site3
Site4
Site5

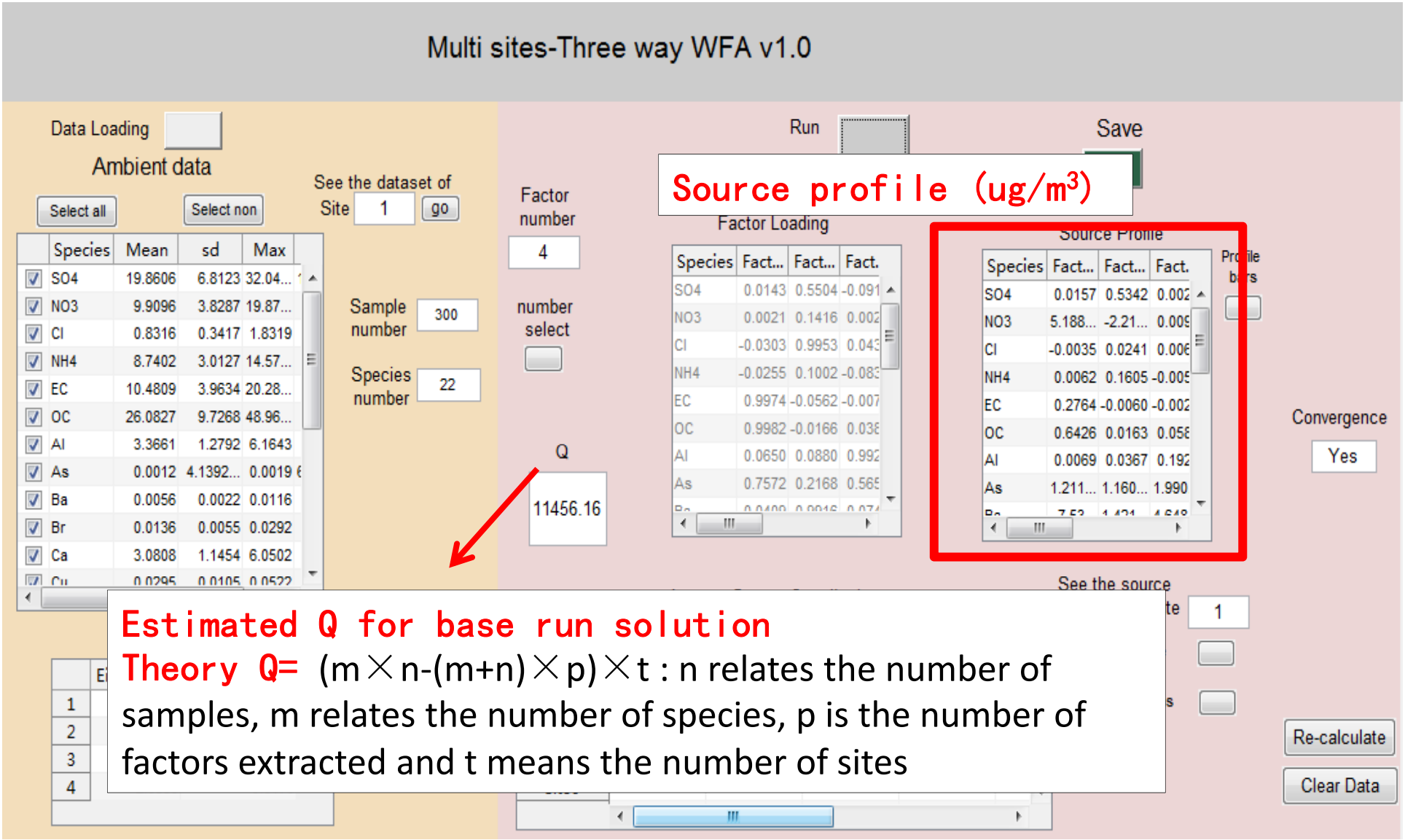
WFA3 1.0


Multi sites-Three way WFA v1.0
Data Loading
Ambient data
Select all
Select non
See the dataset of
Site 1 go
Species Mean sd Max
SO4 19.8606 6.8123 32.04...
NO3 9.9096 3.8287 19.87...
Cl 0.8316 0.3417 1.8319
NH4 8.7402 3.0127 14.57...
EC 10.4809 3.9634 20.28...
OC 26.0827 9.7268 48.96...
Al 3.3661 1.2792 6.1643
As 0.0012 4.1392... 0.0019
Ba 0.0056 0.0022 0.0116
Br 0.0136 0.0055 0.0292
Ca 3.0808 1.1454 6.0502
Sample number 300
Species number 22
Eigenvalue and Variance(%)
Eigenvalue Variance (%)
1 7.1985 32.7206
2 6.0765 27.6205
3 5.8604 26.6383
4 2.0939 9.5179
Factor number 4
number select
Run
Factor Loading
Species Fact... Fact... Fact.
SO4 0.0143 0.5504 -0.091
NO3 0.002 0.1416 0.002
Cl 0.9953 0.043
NH4 0.1002 -0.083
EC 0.9974 -0.0562 -0.007
OC 0.9982 -0.0166 0.038
2. Run
Save
Source Profile
Species Fact... Fact... Fact.
Profile bars
Convergence
Average Source Contribution
Source 1 Source 2 Source 3 Source 4 So
Site1
Site2
Site3
Site4
Site5
See the source information of site 1
Percentage Pie
Contributions plot
Re-calculate
Clear Data

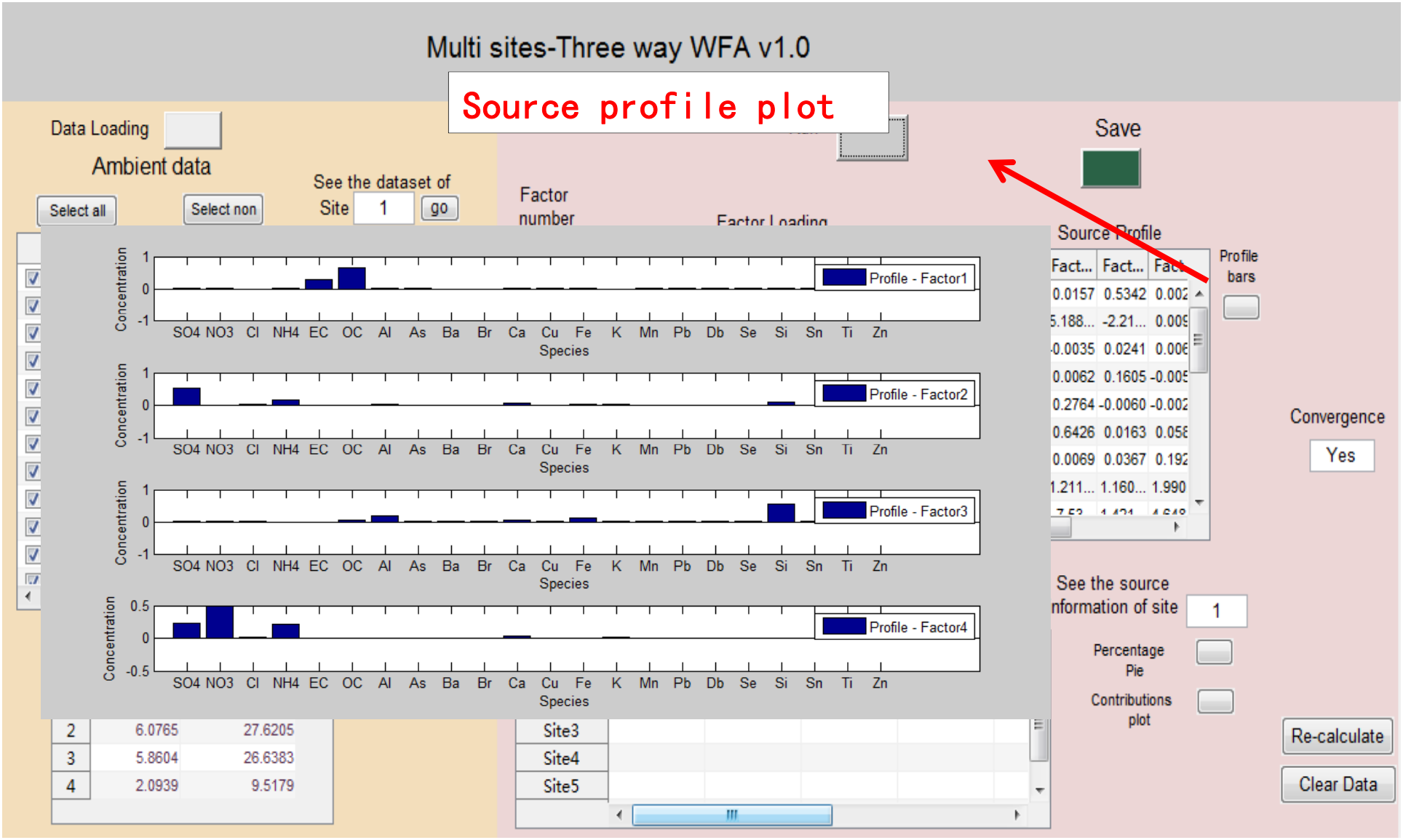
WFA3 1.0


Multi sites-Three way WFA v1.0
Data Loading
Ambient data
Select all
Select non
See the dataset of
Site
1
go
Species Mean sd Max
SO4 19.8606 6.8123 32.04...
NO3 9.9096 3.8287 19.87...
Cl 0.8316 0.3417 1.8319
NH4 8.7402 3.0127 14.57...
EC 10.4809 3.9634 20.28...
OC 26.0827 9.7268 48.96...
Al 3.3661 1.2792 6.1643
As 0.0012 4.1392... 0.0019
Ba 0.0056 0.0022 0.0116
Br 0.0136 0.0055 0.0292
Ca 3.0808 1.1454 6.0502
Sample number
300
Species number
22
Eigenvalue and Variance(%)
Eigenvalue Variance (%)
1 7.1985 32.7206
2 6.0765 27.6205
3 5.8604 26.6383
4 2.0939 9.5179
Run
Save
Factor
4
number select
Q
11456.16
Factor Loading
Species Fact... Fact... Fact.
SO4 0.0143 0.5504 -0.091
NO3 0.0021 0.1416 0.002
Cl -0.0303 0.9953 0.043
NH4 -0.0255 0.1002 -0.083
EC 0.9974 -0.0562 -0.007
OC 0.9982 -0.0166 0.038
Al 0.0650 0.0880 0.992
As 0.7572 0.2168 0.565
Source Profile
Species Fact... Fact... Fact.
SO4 0.0157 0.5342 0.002
NO3 5.188... -2.21... 0.009
Cl -0.0035 0.0241 0.006
NH4 0.0062 0.1605 -0.005
EC 0.2764 -0.0060 -0.002
OC 0.6426 0.0163 0.058
Al 0.0069 0.0367 0.192
As 1.211... 1.160... 1.990
Profile bars
Results
Average Source Contribution
Source 1 Source 2 Source 3 Source 4 So
Site1 62.8632 43.2358 29.1051 26.0307
Site2 31.4316 21.6179 14.5526 13.0153
Site3
Site4
Site5
he source information of site
1
Percentage Pie
Contributions plot
Convergence
Yes
Re-calculate
Clear Data

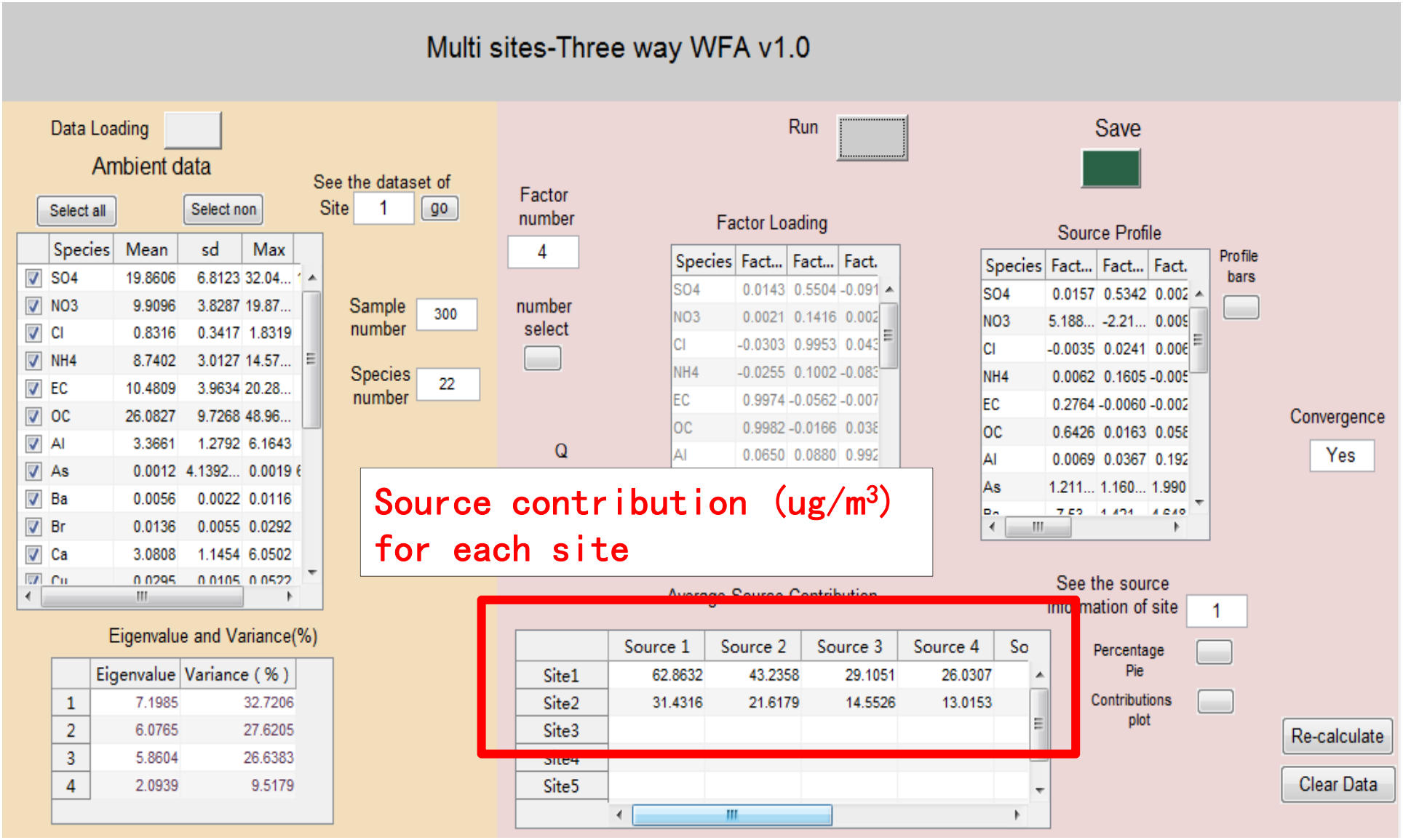
WFA3 1.0


Multi sites-Three way WFA v1.0
Data Loading
Ambient data
Select all
Select non
See the dataset of
Site
1
go
Species Mean sd Max
SO4 19.8606 6.8123 32.04...
NO3 9.9096 3.8287 19.87...
Cl 0.8316 0.3417 1.8319
NH4 8.7402 3.0127 14.57...
EC 10.4809 3.9634 20.28...
OC 26.0827 9.7268 48.96...
Al 3.3661 1.2792 6.1643
As 0.0012 4.1392... 0.0019
Ba 0.0056 0.0022 0.0116
Br 0.0136 0.0055 0.0292
Ca 3.0808 1.1454 6.0502
Sample number
300
Species number
22
Factor number
4
number select
Q
11456.16
Run
Save
Source profile (ug/m3)
Factor Loading
Species Fact... Fact... Fact.
SO4 0.0143 0.5504 -0.091
NO3 0.0021 0.1416 0.002
Cl -0.0303 0.9953 0.043
NH4 -0.0255 0.1002 -0.083
EC 0.9974 -0.0562 -0.007
OC 0.9982 -0.0166 0.038
Al 0.0650 0.0880 0.992
As 0.7572 0.2168 0.565
Source Profile
Species Fact... Fact... Fact.
SO4 0.0157 0.5342 0.002
NO3 5.188... -2.21... 0.009
Cl -0.0035 0.0241 0.006
NH4 0.0062 0.1605 -0.005
EC 0.2764 -0.0060 -0.002
OC 0.6426 0.0163 0.058
Al 0.0069 0.0367 0.192
As 1.211... 1.160... 1.990
Convergence
Yes
See the source
1
Re-calculate
Clear Data
Estimated Q for base run solution
Theory Q= (m×n-(m+n)×p)×t : n relates the number of samples, m relates the number of species, p is the number of factors extracted and t means the number of sites

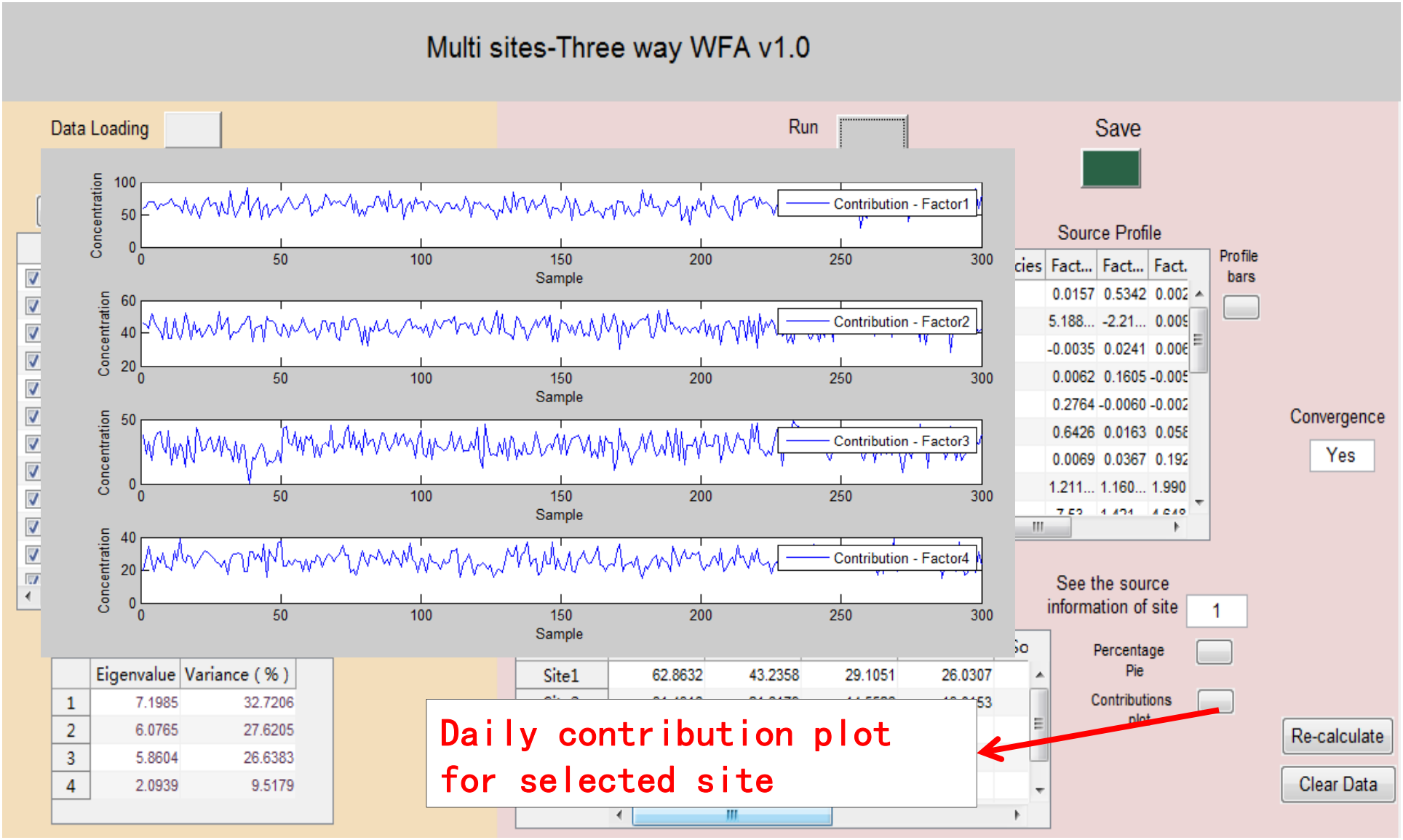
WFA3 1.0


Multi sites-Three way WFA v1.0
Source profile plot
Data Loading
Ambient data
Select all
Select non
See the dataset of
Site
1
go
Factor
number
Factor Loading
Save
Source Profile
Profile
bars
Profile - Factor1
Profile - Factor2
Profile - Factor3
Profile - Factor4
Concentration
Species
SO4 NO3 Cl NH4 EC OC Al As Ba Br Ca Cu Fe K Mn Pb Db Se Si Sn Ti Zn
Convergence
Yes
See the source
nformation of site
1
Percentage
Pie
Contributions
plot
Re-calculate
Clear Data
Site3
Site4
Site5

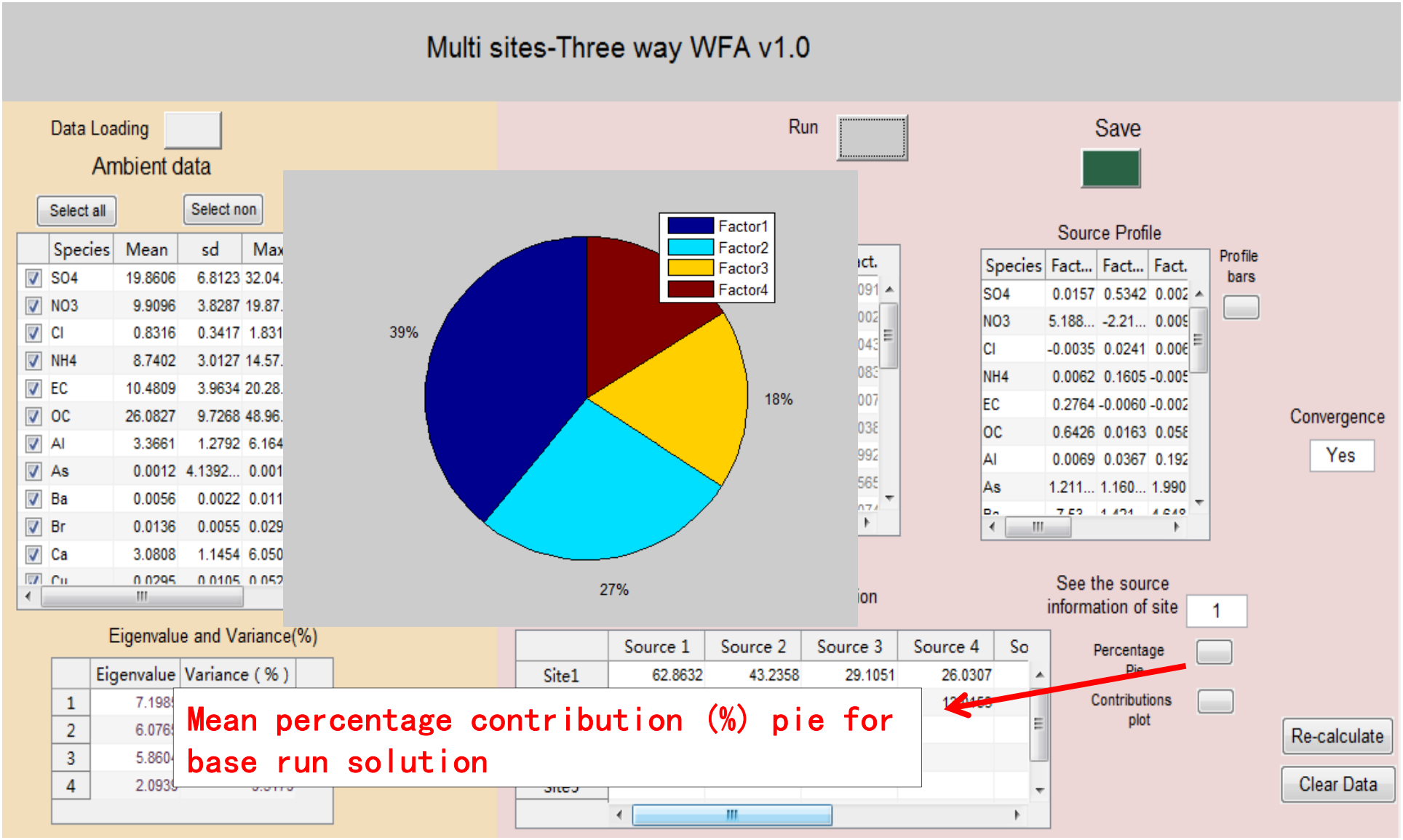
WFA3 1.0


Multi sites-Three way WFA v1.0
Data Loading
Ambient data
Select all
Select non
See the dataset of Site 1 go
Species Mean sd Max
SO4 19.8606 6.8123 32.04...
NO3 9.9096 3.8287 19.87...
Cl 0.8316 0.3417 1.8319
NH4 8.7402 3.0127 14.57...
EC 10.4809 3.9634 20.28...
OC 26.0827 9.7268 48.96...
Al 3.3661 1.2792 6.1643
As 0.0012 4.1392... 0.0019
Ba 0.0056 0.0022 0.0116
Br 0.0136 0.0055 0.0292
Ca 3.0808 1.1454 6.0502
Sample number 300
Species number 22
Factor number 4
number select
Q
Run
Factor Loading
Species Fact... Fact... Fact.
SO4 0.0143 0.5504 -0.091
NO3 0.0021 0.1416 0.002
Cl -0.0303 0.9953 0.043
NH4 -0.0255 0.1002 -0.083
EC 0.9974 -0.0562 -0.007
OC 0.9982 -0.0166 0.038
Al 0.0650 0.0880 0.992
Source contribution (ug/m3) for each site
Save
Source Profile
Species Fact... Fact... Fact.
SO4 0.0157 0.5342 0.002
NO3 5.188... -2.21... 0.009
Cl -0.0035 0.0241 0.006
NH4 0.0062 0.1605 -0.005
EC 0.2764 -0.0060 -0.002
OC 0.6426 0.0163 0.058
Al 0.0069 0.0367 0.192
As 1.211... 1.160... 1.990
Profile bars
Convergence
Yes
Eigenvalue and Variance(%)
Eigenvalue Variance (%)
1 7.1985 32.7206
2 6.0765 27.6205
3 5.8604 26.6383
4 2.0939 9.5179
Source 1 Source 2 Source 3 Source 4 So
Site1 62.8632 43.2358 29.1051 26.0307
Site2 31.4316 21.6179 14.5526 13.0153
Site3
Site5
See the source information of site 1
Percentage Pie
Contributions plot
Re-calculate
Clear Data

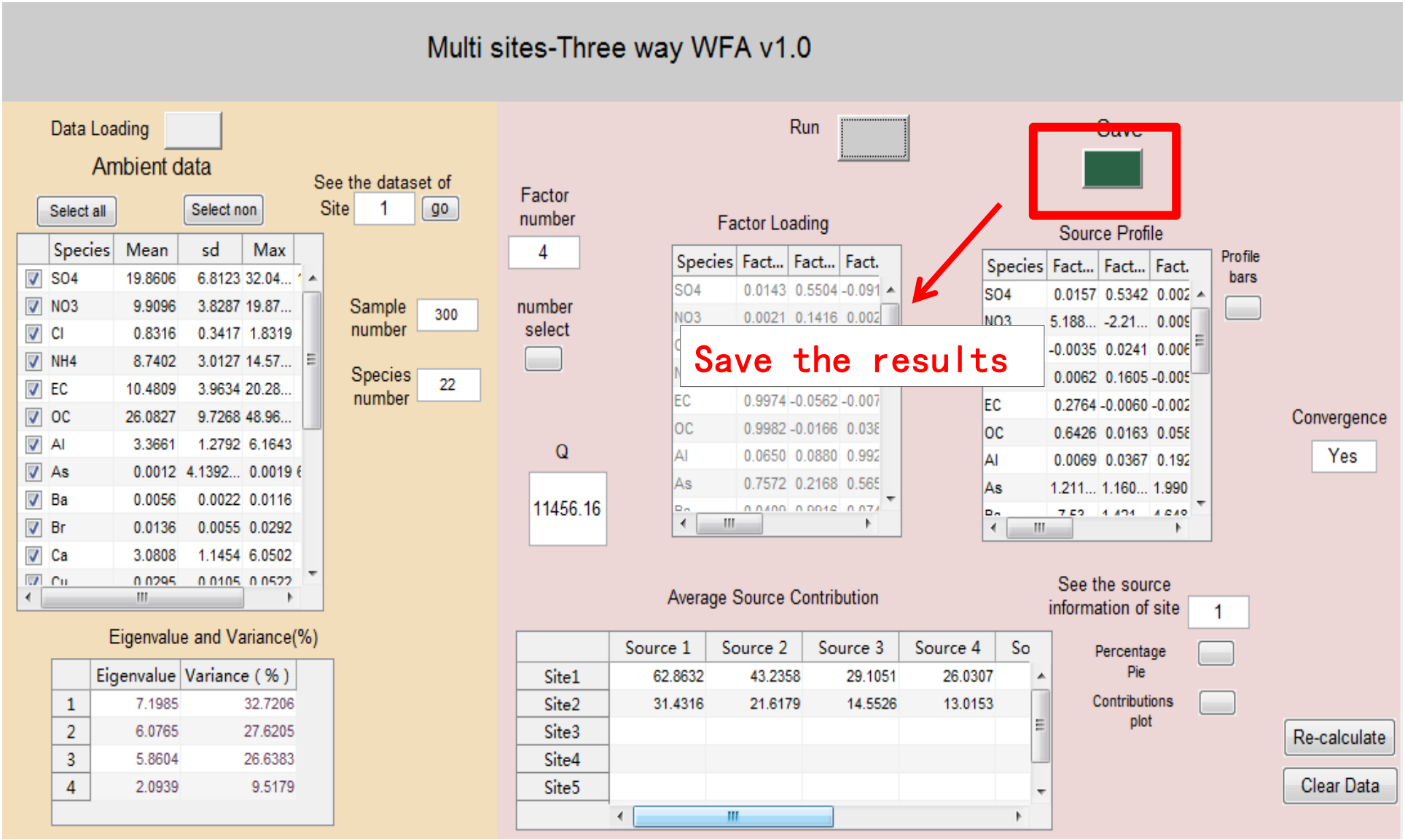
WFA3 1.0


Multi sites-Three way WFA v1.0
Data Loading
Run
Save
Contribution - Factor1
Contribution - Factor2
Contribution - Factor3
Contribution - Factor4
Concentration
Sample
Source Profile
Profile bars
Convergence
Yes
See the source information of site
1
Percentage Pie
Contributions plot
Re-calculate
Clear Data
Eigenvalue
Variance (%)
1 7.1985 32.7206
2 6.0765 27.6205
3 5.8604 26.6383
4 2.0939 9.5179
Site1 62.8632 43.2358 29.1051 26.0307
Daily contribution plot for selected site

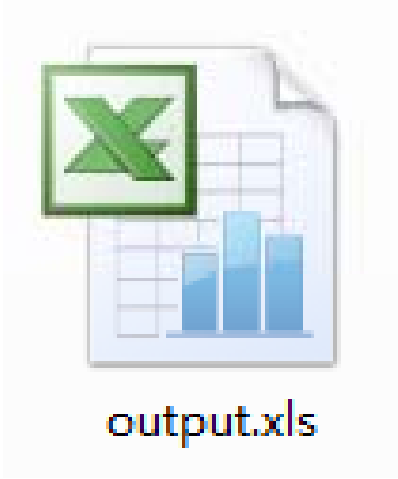
WFA3 1.0


Multi sites-Three way WFA v1.0
Data Loading
Ambient data
Select all
Select non
Species Mean sd Max
SO4 19.8606 6.8123 32.04
NO3 9.9096 3.8287 19.87
Cl 0.8316 0.3417 1.831
NH4 8.7402 3.0127 14.57
EC 10.4809 3.9634 20.28
OC 26.0827 9.7268 48.96
Al 3.3661 1.2792 6.164
As 0.0012 4.1392... 0.001
Ba 0.0056 0.0022 0.011
Br 0.0136 0.0055 0.029
Ca 3.0808 1.1454 6.050
Factor1
Factor2
Factor3
Factor4
39%
18%
27%
Run
Save
Source Profile
Species Fact... Fact... Fact.
SO4 0.0157 0.5342 0.002
NO3 5.188... -2.21... 0.009
Cl -0.0035 0.0241 0.006
NH4 0.0062 0.1605 -0.005
EC 0.2764 -0.0060 -0.002
OC 0.6426 0.0163 0.058
Al 0.0069 0.0367 0.192
As 1.211... 1.160... 1.990
Profile bars
Convergence
Yes
Eigenvalue and Variance(%)
Eigenvalue Variance (%)
1 7.198
2 6.076
3 5.860
4 2.093
Source 1 Source 2 Source 3 Source 4 So
Site1 62.8632 43.2358 29.1051 26.0307
See the source information of site
1
Percentage Pie
Contributions plot
Mean percentage contribution (%) pie for base run solution
Re-calculate
Clear Data

WFA3 1.0


Multi sites-Three way WFA v1.0
Data Loading
Ambient data
Select all
Select non
See the dataset of
Site 1 go
Species Mean sd Max
SO4 19.8606 6.8123 32.04...
NO3 9.9096 3.8287 19.87...
Cl 0.8316 0.3417 1.8319
NH4 8.7402 3.0127 14.57...
EC 10.4809 3.9634 20.28...
OC 26.0827 9.7268 48.96...
Al 3.3661 1.2792 6.1643
As 0.0012 4.1392... 0.0019
Ba 0.0056 0.0022 0.0116
Br 0.0136 0.0055 0.0292
Ca 3.0808 1.1454 6.0502
Sample number 300
Species number 22
Eigenvalue and Variance(%)
Eigenvalue Variance (%)
1 7.1985 32.7206
2 6.0765 27.6205
3 5.8604 26.6383
4 2.0939 9.5179
Run
Save
Factor number 4
number select
Q 11456.16
Factor Loading
Species Fact... Fact... Fact.
SO4 0.0143 0.5504 -0.091
NO3 0.0021 0.1416 0.002
EC 0.9974 -0.0562 -0.007
OC 0.9982 -0.0166 0.038
Al 0.0650 0.0880 0.992
As 0.7572 0.2168 0.565
Save the results
Source Profile
Species Fact... Fact... Fact.
SO4 0.0157 0.5342 0.002
NO3 5.188... -2.21... 0.009
-0.0035 0.0241 0.006
0.0062 0.1605 -0.005
EC 0.2764 -0.0060 -0.002
OC 0.6426 0.0163 0.058
Al 0.0069 0.0367 0.192
As 1.211... 1.160... 1.990
Profile bars
Convergence
Yes
Average Source Contribution
Source 1 Source 2 Source 3 Source 4 So
Site1 62.8632 43.2358 29.1051 26.0307
Site2 31.4316 21.6179 14.5526 13.0153
Site3
Site4
Site5
See the source information of site 1
Percentage Pie
Contributions plot
Re-calculate
Clear Data

WFA3 1.0



Output

User can change the names of the output files

WFA3 1.0

- Result (Base Run)

	A	B	C	D	E	F	G	H	I
1	0.015711	0.53416	0.002893	0.230634					
2	0.000519	-0.00022	0.009798	0.498364					
3	-0.00354	0.024089	0.006265	0.012256					
4	0.006187	0.160459	-0.00522	0.210771					
5	0.2764	-0.00599	-0.00279	-0.00235					
6	0.642557	0.016272	0.05812	0.003877					
7	0.006913	0.036702	0.192359	-0.00069					
8	1.21E-05	1.16E-05	1.99E-05	9.82E-06					
9	-7.5E-06	0.000142	4.65E-05	7.7E-05					
10	-4.3E-05	0.000377	9.42E-05	0.000198					
11	0.006088	0.063937	0.047402	0.029288					
12	0.000478	0.000147	0.00059	2.29E-05					
13	0.016374	0.022148	0.10704	0.000571					
14	-0.00522	0.042027	0.026464	0.019733					
15	0.000155	0.000893	0.003291	0.000136					
16	0.000683	0.000196	0.000199	9.08E-05					
17	1.21E-05	1.16E-05	1.99E-05	9.82E-06					
18	7.58E-06	4.17E-05	2.6E-05	2.53E-05					
19	0.026697	0.106562	0.538999	7.39E-05					
20	7.58E-06	4.17E-05	2.6E-05	2.53E-05					
21	0.000591	0.004005	0.020281	4.63E-06					
22	0.010525	0.000718	-0.00017	0.00043					
23									
24									
25									
26									
27									

Sheet1 Sheet2 Sheet3 F_profile G_matrix Contribution Mean_Contribution

Output information:

F_profile: source profile
G_matrix: normarlized source contribution
Source contribution
Mean contribution