Table S1. The results of measurements for GF/F samples.

date	time	River conditions		TSS concentrations	Contents in river waters			Properties in TSS			
		Assumed condition.	Redefined condition.		Particulate ^{137}Cs	POC	^{137}Cs	TC	TOC	$\delta^{13}C_{TC}$	$\delta^{13}C$
				mg L^{-1}	mBq L^{-1}	mgC L^{-1}	Bq kg^{-1}	mgC mg^{-1}		‰	
2017/5/12	11:20	base	high-TSS-load	6.4	35.9	0.576	1654	0.074	0.090	-24.6	-25.4
2017/5/30	9:55	base	high-TSS-load	7.1	30.8	0.374	4012	0.060	0.053	-25.0	-24.3
2017/7/20	16:30	base	high-TSS-load	4.9	23.9	0.420	6449	0.130	0.086	-25.6	-24.6
2017/9/26	13:08	base	base-TSS-load	1.5	18.1	0.279	5629	0.189	0.192	-25.2	-25.2
2017/12/13	14:00	base	high-TSS-load	19.8	14.6	2.627	4718	0.065	0.133	-26.0	-26.4
2018/1/29	10:30	base	base-TSS-load	1.9	12.4	0.176	3627	0.113	0.092	-24.7	-24.1
2018/2/27	9:00	base	-	1.6	99.3	0.226	**33859**	0.214	0.138	-24.1	-22.2
2017/9/1	20:30	high	high-TSS-load	16.0	25.4	0.418	2159	0.032	0.026	-26.0	-26.0
2017/9/2	0:30	high	high-TSS-load	7.8	18.0	0.440	2578	0.061	0.056	-26.1	-25.8
2017/9/2	4:30	high	high-TSS-load	21.5	59.1	0.949	3746	0.038	0.044	-26.1	-26.1
2017/9/2	8:30	high	high-TSS-load	53.1	139.9	2.191	2849	0.043	0.041	-27.0	-26.6
2017/9/2	12:30	high	high-TSS-load	56.5	126.8	2.872	4363	0.048	0.051	-27.0	-26.7
2017/9/2	16:30	high	high-TSS-load	31.6	153.6	1.367	6542	0.047	0.043	-26.9	-26.7
2017/9/17	11:05	high	base-TSS-load	1.5	27.5	0.222	2906	0.212	0.153	-25.2	-24.8
2017/9/17	15:10	high	base-TSS-load	1.8	31.8	0.260	3982	0.263	0.143	-26.1	-24.9
2017/9/17	19:25	high	high-TSS-load	16.7	47.9	0.836	3076	0.055	0.050	-26.1	-25.9
2017/9/17	23:30	high	high-TSS-load	106.4	157.1	6.215	2122	0.061	0.058	-27.0	-27.3

2017/9/18	3:30	high	high-TSS-load	120.2	71.7	5.916	2292	0.054	0.049	-27.3	-27.3
2017/9/18	7:30	high	high-TSS-load	67.8	78.7	3.618	3504	0.049	0.053	-27.1	-26.9
2017/10/22	12:30	high	high-TSS-load	234.9	78.0	11.733	2890	0.054	0.050	-26.8	-27.5
2017/10/22	16:30	high	high-TSS-load	407.3	67.4	20.944	2880	0.053	0.051	-27.5	-27.6
2017/10/22	20:30	high	high-TSS-load	671.6	476.5	34.681	3147	0.054	0.052	-27.5	-27.6
2017/10/23	0:30	high	high-TSS-load	486.7	46.0	25.475	3063	0.052	0.052	-27.6	-27.7
2017/10/23	4:30	high	high-TSS-load	247.1	58.5	10.078	2186	0.044	0.041	-27.5	-27.2
2017/10/23	8:30	high	high-TSS-load	925.5	68.3	44.381	3300	0.051	0.048	-27.2	-27.5
2017/10/23	12:30	high	high-TSS-load	386.7	53.8	17.136	2221	0.048	0.044	-27.5	-27.2
2018/5/22	9:28	base	-	16.6	30.5	N.A.	3315	N.A.	N.A.	N.A.	N.A.
2018/8/22	11:20	base	base-TSS-load	4.2	10.6	0.319	1401	0.090	0.077	-27.1	-27.0
2018/11/16	12:15	base	base-TSS-load	3.4	9.2	0.218	1575	0.072	0.065	-24.5	-23.9
2019/2/19	11:55	base	base-TSS-load	1.5	36.4	0.386	7806	0.337	0.265	-24.8	-24.0
2018/8/9	8:45	high	high-TSS-load	456.6	94.1	30.118	2121	0.074	0.066	-28.6	-28.7
2018/8/9	12:45	high	high-TSS-load	283.7	55.1	17.749	1842	0.069	0.063	-26.8	-26.6
2018/8/9	16:45	high	high-TSS-load	123.8	24.3	8.835	1770	0.082	0.071	-27.1	-26.9
2018/8/9	20:45	high	high-TSS-load	92.5	77.4	6.821	2800	0.086	0.074	-27.4	-27.4
2018/8/10	0:45	high	high-TSS-load	64.8	152.5	4.446	2528	0.078	0.069	-27.0	-26.8
2018/8/10	4:45	high	high-TSS-load	49.3	78.4	3.306	4036	0.076	0.067	-27.0	-26.8
2018/8/10	8:45	high	high-TSS-load	41.9	67.5	2.910	3670	0.079	0.069	-26.9	-26.8
2018/9/30	10:40	high	-	5.9	1.1	0.419	N.A.	0.081	0.071	-25.6	-25.2
2018/9/30	14:40	high	-	6.9	3.2	0.524	**56461**	0.089	0.076	-25.6	-25.2
2018/9/30	18:40	high	-	7.5	N.D.	0.682	N.D.	0.111	0.091	-21.7	-20.5

2018/9/30	22:40	high	-	9.1	3.2	0.753	**18412**	0.099	0.083	-25.5	-25.0
2018/10/1	2:40	high	high-TSS-load	23.8	53.0	1.471	2749	0.067	0.062	-26.3	-26.0
2018/10/1	6:40	high	-	679.7	712.1	N.A.	2621	N.A.	N.A.	N.A.	N.A.
2018/10/1	10:40	high	high-TSS-load	303.8	471.7	18.785	2671	0.068	0.062	-27.0	-26.8
2019/5/17	14:35	base	high-TSS-load	13.1	37.2	0.769	3099	0.064	0.059	-25.5	-24.8
2019/8/17	9:25	base	high-TSS-load	6.9	11.8	0.625	2164	0.117	0.090	-26.5	-25.8
2019/10/12	10:30	high	high-TSS-load	107.8	204.0	5.524	2159	0.064	0.051	-25.7	-25.4
2019/10/12	14:30	high	high-TSS-load	208.4	164.9	9.260	1824	0.062	0.044	-26.9	-26.3
2019/10/12	18:30	high	high-TSS-load	575.1	151.8	28.690	1225	0.071	0.050	-27.7	-27.0

－: Not determined. N.A.: Data not available. N.D.: Not detected.

The red ink indicates the estimated data using regression analyses.

The blue ink reveal the samples with possible inclusion highly ^{137}Cs concentrated micro particles.