

Supplement of Hydrol. Earth Syst. Sci., 21, 5127–5141, 2017
<https://doi.org/10.5194/hess-21-5127-2017-supplement>
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Supplement of

A systematic examination of the relationships between CDOM and DOC in inland waters in China

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Figure S1. Sampling location at three rivers for tracing the temporal variation of CDOM and DOC. The average widths at sampling stations are about 1020 m, 206m and 152 m for the Songhua River, Hunjiang River and Yalu River, respectively.



Table S1 the sampling information for fresh and saline water lakes, the location information shows the central positions of the lakes. Res. is the abbreviation for reservoir; N, numbers of samples collected; Lat., latitude; Long., longitude; A, area; L, maximum length in kilometer; W, maximum width in kilometer.

Water body type	Sampling date	N	Lat.	Long.	A(km ²)	L (km)	W (km)
Fresh water lake							
Shitoukou Res.	2009.08.28	10	43.9319	125.7472	59	17	6
Songhua Lake	2015.04.29	8	43.6146	126.9492	185	55	6
Erlong Lake	2011.06.24	6	43.1785	124.8264	98	29	8
Xinlicheng Res.	2011.06.13	7	43.6300	125.3400	43	22	6
Yueliang Lake	2011.09.01	6	45.7250	123.8667	116	15	15
Nierji Res.	2015.09.16	8	48.6073	124.5693	436	83	26
Shankou Res.	2015.09.17	4	48.5280	126.8695	48	11	11
Hongqi Res.	2015.09.12	6	43.8922	125.1945	0.1	0.6	0.4
Jingpo Lake	2014.07.15	6	43.8416	128.9022	94	33	18
Xingkai Lake	2013.07.13	16	44.9417	132.4083	4103	89	68
Qingnian Res.	2015.08.18	3	45.6722	131.8127	33	11	10
Nanyin Res.	2015.09.07	5	45.9653	124.5356	116	17	13
Daqing Res.	2015.09.12	11	46.7871	125.1011	52	10	10
Lake Tai	2015.07.15	6	31.2500	120.2500	2338	69	67
Xiashan Res.	2014.10.03	6	36.4472	119.4723	101	20	12
Dongping Lake	2014.10.02	5	35.9712	116.1998	120	20	15
Weishan Lake	2014.10.03	3	34.6041	117.2339	167	18	17
Gaoyou Lake	2015.11.06	3	32.8800	119.2660	631	40	32
Lake Chao	2015.11.03	4	31.5700	117.5500	783	30	30
Hongze Lake	2015.11.05	6	33.3098	118.7060	1567	66	63
Dongting Lake	2015.10.13	4	29.3455	112.9290	1368	137	67
Poyang Lake	2015.11.01	4	29.3050	116.0779	922	85	65
Wuchang Lake	2015.11.02	6	30.2830	116.7300	78	16	10
Donghu Lake	2015.10.10	9	30.5500	114.3833	37	12	11
Yanxihu Lake	2015.10.10	9	30.5734	114.4831	16	8	8
Three Gorge Res.	2009.10.13	9	30.8842	110.9144	312	124	8
Zhelin Res.	2015.10.31	6	29.2755	115.3091	199	16	16
Longgan Lake	2015.11.01	7	29.9810	115.8160	29	10	7
Danjiangkou Res.	2015.10.07	5	32.6872	111.5862	379	112	58
Zhanghe Res.	2015.10.08	7	31.0102	112.0201	51	13	10
Yahekou Res.	2015.10.06	3	33.3064	112.6067	39	10	10
Xiaolangdi Res.	2015.10.05	9	34.9430	112.3011	89	86	22
Fuhai Res.	2015.07.16	6	46.7380	87.9889	25	11	6
Mengjin Res.	2015.07.19	5	44.1173	87.5472	12	4	4
Longyangxia Res.	2014.09.18	7	36.0628	100.7444	285	46	11
Liujiaxia Res.	2009.7.13	8	35.8472	103.2335	113	20	6

Keluke Lake	2014.09.13	6	37.2881	96.8905	54	10	8
Gyoring Lake	2014.09.16	7	34.9265	97.2963	526	23	23
Pumuyong Co	2015.06.25	3	28.5667	90.3833	285	17	12
Dianchi Lake	2015.10.20	5	24.9801	102.6411	305	40	20
Fuxian Lake	2015.10.21	5	24.4917	102.8833	216	31	14
Xingyun Lake	2015.10.21	3	24.3333	102.7751	36	11	6
Qilu Lake	2015.10.21	5	24.1751	102.7667	38	7	7
Chenghai Lake	2015.10.23	6	26.5417	100.6583	75	19	6
Erhai Lake	2015.10.24	5	25.7833	100.2011	239	40	14
Hongfeng Lake	2015.10.18	4	26.4806	106.4107	32	14	11
Beipanjiang Res.	2015.10.18	6	25.7877	105.4248	37	28	2
Saline water lakes							
Chagan Lake	2009.07.17	20	45.2583	124.2583	301	41	19
	2010.08.21	21	45.2583	124.2583	301	41	19
Xindian Lake	2013.07.11	21	45.3500	124.2333	57	15	13
Talahong	2011.09.23	20	46.7599	124.2150	63	14	10
Lamasi Lake	2015.09.08	5	46.2994	124.0970	59	18	11
Dongdahai Lake	2015.09.07	11	46.1083	124.6500	15	8	6
Xidahai Lake	2015.09.07	7	46.0233	124.5927	12	6	6
Longhu Lake	2015.09.09	11	46.7250	124.3750	131	18	12
Keqin Lake	2011.09.22	5	47.3000	124.2917	9	5	3
Hulun Lake	2014.09.22	27	48.8851	117.3328	2126	90	36
Beier Lake	2014.09.23	3	47.7833	117.7333	609	38	27
Huhenuoer	2014.09.23	11	48.2092	119.0573	20	8	7
Fuhai Lake	2015.07.17	18	47.2848	87.3150	856	41	28
Bositeng Lake	2015.07.11	15	41.9667	86.9667	1013	46	31
Erbinur Lake	2015.07.14	17	44.8749	82.9357	511	32	25
Jili Lake	2015.07.14	6	46.9667	87.4333	170	18	16
Ailike Lake	2015.07.18	8	44.5693	84.3270	19	6	4
Qinghai Lake	2013.08.10	18	36.8917	100.1917	4250	80	42
Tuosu Lake	2014.09.13	26	37.1417	96.9417	135	16	12
Dongjinacuo	2014.09.15	8	35.2771	98.5867	232	21	12
Nam Co	2015.06.22	10	30.7167	90.6583	1956	67	44
Siling Co	2015.06.30	6	31.7583	88.9502	1783	63	46
Bamu Co	2015.06.27	10	31.2510	90.5833	199	24	14
Yandrok Co	2015.06.24	5	28.8671	90.6528	590	102	12
Mapayum Co	2015.07.04	3	30.6751	81.4083	416	26	23
Langa Co	2015.07.04	16	30.7418	81.2285	261	28	22
Bangong Lake	2015.07.05	11	33.7198	78.8227	285	46	25
CuoE	2015.06.30	6	31.5916	88.7574	285	39	28

Table S2 Lakes in Northeast China sampled during ice covered season, some lakes were sampled two or three times during the past five years. Res. is the abbreviation for reservoir; N, numbers of samples collected; Lat., latitude; Long., longitude; A, area; L, average length in kilometer; W, average width in kilometer.

Water body type	Sampling date	N	Lat.	Long.	A(km ²)	L (km)	W (km)
Ice covered lakes							
Shitoukou Res.	2011.12.20	9	43.8471	125.8264	59	17	6
Chagan Lake	2012.01.17	8	45.2524	124.2924	301	41	19
	2013.12.28	8	45.2524	124.2924	301	41	19
Erlong Lake	2011.01.24	8	43.0167	124.8167	98	29	8
	2011.12.17	7	43.0167	124.8167	98	29	8
Xinlicheng Res.	2012.01.13	6	43.6586	125.3623	43	22	6
	2013.01.17	7	43.6586	125.3623	43	22	6
	2014.01.20	9	43.6586	125.3623	43	22	6
Xindian Lake	2013.07.11	7	45.3619	124.2867	57	15	13
Shuangyang Res.	2014.01.04	5	43.5323	125.7417	10	6	4
Kuli Lake	2012.12.06	6	45.8292	124.8598	80	18	12
	2013.01.17	4	45.8292	124.8598	80	18	12
Talahong	2011.12.23	4	46.7912	124.1524	63	14	10
	2012.01.17	4	46.7912	124.1524	63	14	10
Yuepao Lake	2011.01.11	5	45.6167	124.3833	22	10	4
	2012.12.01	8	45.6167	124.3833	22	10	4
Zhongnei Lake	2012.01.11	3	46.3167	125.0583	12	5	4
	2014.12.06	5	46.3167	125.0583	12	5	4
Lamasi Lake	2014.01.08	4	46.2833	124.0917	59	18	11
	2015.01.16	3	46.2833	124.0917	59	13	12
Dongdahui Lake	2011.12.07	3	46.1083	124.6500	15	8	6
Xidahui	2011.12.07	3	46.1083	124.0583	12	6	4
	2014.12.12	4	46.1083	124.0583	12	6	4
Nanyin Res.	2014.12.13	4	45.9521	124.5788	116	17	13
	2015.12.12	3	45.9521	124.5788	116	17	13
Lianhuan Lake	2011.12.18	6	45.1234	129.6550	51	32	3
	2014.01.03	6	45.1234	129.6550	51	32	3
Longhu Lake	2014.01.05	6	46.7250	124.3750	131	18	12
	2015.12.27	3	46.7250	124.3750	131	18	12
Daqing Res.	2015.12.29	6	46.8196	125.1461	52	10	10

Table S3 the cities sampled for urban water, the field trips were carried out four times only Changchun city, and water body indicates the numbers of water bodies sampled, several samples were collected in some large urban waters (including lakes, ponds and rivers), thus the sample numbers may be greater than water body.

City names	Sampling dates	Water body	Samples	Longitude	Latitude
Changchun	2013.05.12	10	20	125.352	43.979
	2013.06.29	8	16	125.352	43.979
	2014.08.20	8	16	125.352	43.979
	2015.07.17	8	16	125.352	43.979
Siping	2014.07.28	4	12	124.594	43.807
Dalian	2014.10.09	6	12	121.725	39.911
Harbin	2014.08.26	10	18	126.705	45.862
Shenyang	2014.08.15	8	18	123.421	41.872
Chifeng	2013.09.24	3	6	117.527	43.24
Tianjin	2014.07.28	8	10	117.213	39.131
Beijing	2014.07.26	11	21	116.372	39.847
Panjin	2015.09.04	6	8	122.071	41.012
Weifang	2014.10.04	4	6	118.922	37.241
Jingzhou	2014.10.07	6	6	112.236	30.331
Wuhan	2015.10.09	6	10	114.374	30.558
Guiyang	2015.09.17	6	6	106.629	26.651
Nanning	2015.10.16	5	10	108.232	22.839
Kunming	2015.10.15	5	10	102.706	25.047

Table S4 the rivers or stream sampled for this study, some of the rivers or stream don't have official name, thus these rivers are listed as Noname. Note, several sampling stations were collected for these large rivers, thus river name may repeat several times in the table but with different sampling dates or coordinates.

River name in English	Latitude	Longitude	Sampling date
Hulan River	45.9261	126.7763	2012/5/9
Songhua River	45.1661	124.8146	2012/5/9
Laokanzi River	45.5338	124.2873	2012/5/9
Yimin River	49.2092	119.7627	2012/5/9
Moligele River	49.6096	118.0859	2012/5/9
Bayannaor River	49.7642	118.4947	2012/9/13
Qingkai River	49.4932	117.7517	2012/9/13
Kelulun River	48.6469	116.8227	2012/9/13
Yitong River	43.9338	125.3645	2012/10/12
Daling River	40.9794	121.6312	2012/10/23
Xishahe River	41.1476	121.8083	2012/10/23
Daliaohe River	40.8040	122.0934	2012/10/23
Hunhe River	41.0696	122.4465	2012/10/24
Daling River	40.9795	121.6314	2012/9/18
Raoyang River	41.1468	121.8077	2012/9/18
Shuangtaizi River	41.5036	121.9379	2012/9/18
Daliaohe River	40.7891	122.0940	2012/9/18
Hunhe River	41.0689	122.4466	2012/9/18
Hunhe River	41.8530	123.7183	2012/9/18
Xinkaihe River	43.6897	123.5187	2012/9/18
Dongliaohe River	43.5292	123.5998	2012/9/18
Xiliaohe River	43.0442	123.5131	2012/9/19
Dongliaohe River	42.9848	123.5607	2012/9/19
Liaohe River	42.6380	123.6285	2012/9/20
Liaohe River	42.4167	123.8124	2012/9/20
Qinghe	42.4317	123.8669	2012/9/20
Fan River	42.2755	123.6643	2012/9/21
Liaohe River	42.0652	123.0306	2012/9/22
Xiushui River	42.1145	123.0544	2012/9/22
Liuhe River	41.9034	122.8360	2012/9/23
Liaohe River	41.9643	122.8906	2012/9/23
Xihe River	41.5431	121.4179	2012/9/23
Daling River	40.9789	121.6317	2012/9/25
Xishahe River	41.1468	121.8076	2012/9/25
Hunhe River	41.0689	122.4465	2012/9/25
Hunhe River	41.5498	123.0469	2012/9/25
Taizihe River	41.2464	123.3414	2012/9/25

Taizihe River	41.3473	123.1370	2012/9/25
Hunhe River	41.8530	123.7183	2012/9/25
Caihe River	42.3270	123.8520	2012/9/25
Caihe River	42.2783	123.9277	2012/9/26
Dongliaohe River	42.9751	124.8986	2012/9/26
Dengganhe River	42.9813	125.3136	2012/9/26
Liaohe River	42.8517	125.3942	2013/9/9
Dongliaohe River	43.2271	124.7697	2013/9/10
Xinkaihe River	43.6895	123.5186	2013/9/10
Xiliaohe River	43.4258	123.5895	2013/9/10
Dongliaohe River	42.9839	123.5597	2013/9/11
Liaohe River	42.6385	123.6274	2013/9/11
Liaohe River	42.5989	123.6744	2013/9/11
Zhaosutai River	42.6332	123.6745	2013/9/11
Caihe River	42.3268	123.8519	2013/9/12
Qinghe River	42.4327	123.8672	2013/9/12
Shahe River	42.4162	123.9605	2013/9/12
Caihe River	42.2786	123.9274	2013/9/12
Xiushui River	42.1145	123.0546	2013/9/13
Liuhe River	41.9039	122.8351	2013/9/14
Liaohe River	41.7074	122.7230	2013/9/14
Hunhe River	41.5498	123.0471	2013/9/15
Daling River	40.9840	121.6312	2013/9/16
Raoyang River	41.1467	121.8069	2013/9/16
Shuangtaizi River	41.1524	121.9380	2013/9/16
Daliaohe River	40.7890	122.0940	2013/9/16
Taizihe River	41.0008	122.4967	2013/9/16
Taizihe River	41.3504	123.1312	2013/9/18
Taizihe River	41.2928	123.4725	2013/9/18
Hunhe River	41.8530	123.7183	2013/9/19
Fan River	42.2756	123.6638	2013/9/19
Lajinhe River	42.9316	125.4629	2013/9/20
Liaohe River	42.8518	125.3942	2013/9/20
Dongliaohe River	42.9750	124.8986	2013/9/20
Dongliaohe River	43.2272	124.7697	2013/9/20
Xinkaihe River	43.6898	123.5187	2013/10/16
Dongliaohe River	43.4193	123.7226	2013/10/16
Xiliaohe River	43.4248	123.5896	2013/10/16
Xinkaihe River	43.7759	121.2678	2013/10/19
Laohahe River	42.7597	119.7090	2013/10/21
Laohahe River	42.7270	119.6459	2013/10/21
Xilamulun River	43.2594	118.1799	2013/10/22
Xiliaohe River	42.9830	123.5394	2013/10/24
Dongliaohe River	42.9841	123.5600	2013/10/24

Daduhe River	40.4372	122.2561	2013/10/14
Honghai River	40.2376	122.1116	2013/10/14
Xiongyue River	40.1967	122.0587	2013/10/14
Yandian River	39.9043	121.7583	2013/10/14
Nashui River	39.4243	121.9250	2013/10/14
Anzi River	39.4042	121.9348	2013/10/14
Yellow River	37.7294	120.5274	2013/10/16
Yongwen River	37.6961	120.4059	2013/10/16
Houjia River	37.5021	120.2322	2013/10/16
Dongsi River	37.2152	119.8677	2013/10/16
Zehe River	36.9685	119.6463	2013/10/16
Jiaolai River	36.9626	119.5858	2013/10/16
Bailang River	37.0122	119.1565	2013/10/16
Yellow River	37.7389	118.7557	2013/10/17
Yellow River	37.7899	118.9651	2013/10/17
Yellow River	37.7691	119.1333	2013/10/17
Noname	38.0195	118.7212	2013/10/18
Liaohe River	37.9766	118.5876	2013/10/18
Liaohe River	38.0165	118.4009	2013/10/18
Chaohe River	38.0603	118.2246	2013/10/18
Xihai River	38.1215	118.0531	2013/10/18
Kouzi River	38.2772	117.8032	2013/10/19
Qingliang River	38.4761	117.6185	2013/10/19
Noname	38.6178	117.5471	2013/10/19
Ziya River	38.6542	117.5373	2013/10/19
Chaobai River	39.0921	117.7227	2013/10/20
Jianhe River	39.2266	118.0654	2013/10/20
Shuohe River	39.1802	118.6125	2013/10/20
Dapuhe River	39.6763	119.3163	2013/10/21
Yanghe River	39.7793	119.4158	2013/10/21
Nandaihe River	39.8033	119.4315	2013/10/21
Xinhe River	39.8394	119.5133	2013/10/21
Tanghe River	39.9210	119.5666	2013/10/22
Dashihe River	39.9679	119.7733	2013/10/22
Qiangliuhe River	40.0643	119.9679	2013/10/22
Xiaozhuangzi River	40.2264	120.4521	2013/10/22
Liuguhe River	40.2740	120.4693	2013/10/22
Xingchengnan River	40.5968	120.7614	2013/10/22
Xinding River	40.7402	120.9369	2013/10/23
Jingzhou River	40.8291	121.0051	2013/10/23
Noname	40.8873	121.1769	2013/10/23
Xiaolinghe River	40.8926	121.2580	2013/10/23
Daling River	40.9832	121.6316	2013/10/23
Baxiangagn River	40.9586	121.7715	2013/10/23

Liaohe River	40.8882	121.7680	2013/10/23
Liaohe River	41.1486	121.8063	2013/10/23
Liaohe River	41.1229	121.9072	2013/10/23
Sanchahe River	41.0031	122.4135	2013/10/24
Aodong River	43.3531	128.2403	2013/7/9
Shahe River	43.4806	128.3708	2013/7/9
Yitong River	43.8320	125.3512	2013/6/13
Yalujiang River	41.7431	127.0456	2014/10/11
Wudaogou River	41.7343	127.0544	2014/10/11
Yalujiang River	41.5967	127.1757	2014/10/11
Jiapigou River	41.5489	127.1658	2014/10/11
Badaogou River	41.5148	127.2346	2014/10/11
Jiudaogou River	41.4824	127.2951	2014/10/11
Shisandaogou River	41.4706	127.5444	2014/10/11
Shisandaogou River	41.4493	127.7767	2014/10/11
Shisandaogou River	41.4340	127.7932	2014/10/11
Daliuhe River	42.6880	126.0668	2014/10/12
Yalujiang River	41.8034	126.9142	2014/9/28
Jinghan Cannel	35.8571	116.0979	2014/9/28
Yellow River	35.9218	115.8877	2014/9/28
Baima River	35.1805	116.7136	2014/10/1
Wangchao River	35.0400	116.9456	2014/10/1
Jinghe River	35.0036	116.9345	2014/10/1
Xinhechuhe River	35.1245	118.6261	2014/10/1
Xinhe River	35.0620	118.3719	2014/10/1
Noname	37.4232	121.5579	2014/10/2
Neijia River	37.4942	121.2657	2014/10/2
Yellow River	40.5310	109.9037	2014/10/2
Wulanmulun River	39.5893	109.8113	2014/10/2
Bawanghe River	41.0210	113.1640	2014/10/2
Xiaohe River	40.7628	111.6628	2014/10/2
Yaoshui River	36.6027	101.2414	2014/9/12
Daotang River	36.3995	100.9747	2014/9/12
Huangshui River	36.5888	95.0058	2014/9/13
Qingshuihe River	36.1516	97.8032	2014/9/14
Tuohaihe River	36.0259	97.8032	2014/9/14
Xiangride River	35.9806	97.8752	2014/9/14
Chaidamu River	35.6745	98.3828	2014/9/14
Noname	34.8440	98.4408	2014/9/15
Yellow River	34.8848	98.1705	2014/9/16
Yellow River	34.8286	98.3532	2014/9/16
Noname	36.6316	100.0973	2014/9/17
Noname	36.6492	100.0308	2014/9/17
Shaliuhe River	37.3274	100.1222	2014/9/17

Noname	37.2199	100.4772	2014/9/17
Noname	37.0481	100.4479	2014/9/17
Buhahe River	37.0349	99.7380	2014/9/17
Quanjihe River	37.2712	99.8983	2014/9/17
Daotang River	36.5755	100.7469	2014/9/17
Nanchuan River	36.6319	101.7789	2014/9/19
Huangshui River	36.6369	101.7647	2014/9/19
Lasahe River	29.6469	91.0965	2015/7/2
Liushahe River	29.6863	91.1128	2015/7/2
Dangqu River	30.4230	90.9969	2015/7/2
Noname	30.7912	91.1128	2015/7/2
Noname	30.8314	91.0725	2015/7/2
Noname	30.6207	91.1078	2015/7/2
Yaluzangbu River	29.3513	90.7323	2015/7/2
Yaluzangbu River	29.2753	90.6285	2015/7/2
Noname	28.7873	90.4731	2015/7/2
Noname	31.1933	90.4614	2015/7/4
Noname	31.2600	90.3527	2015/7/4
Noname	31.5240	89.7435	2015/7/4
Gerencuo River	31.0828	88.5108	2015/7/4
Gerencuo River	31.1867	88.3272	2015/7/4
Zhagebuzha River	31.0013	88.5895	2015/7/4
Noname	31.6775	88.5410	2015/7/4
Maniding River	31.8100	88.4100	2015/7/4
Bocangzangbu River	31.7949	87.2401	2015/7/5
Noname	31.5003	87.2822	2015/7/5
Noname	31.0663	87.0164	2015/7/5
Daguozangbu River	30.5792	86.6237	2015/7/5
Duoxiongzangbu River	29.4555	86.6883	2015/7/5
Qiangxiongzangbu River	29.4834	86.0266	2015/7/5
Yaluzangbu River	29.3191	85.2591	2015/7/5
Maerqiong River	29.4274	85.2342	2015/7/5
Noname	29.5433	84.6177	2015/7/5
Noname	29.6411	84.2337	2015/7/5
Chaiquzangbu River	29.7116	84.0696	2015/7/6
Noname	30.4795	82.6294	2015/7/6
Noname	30.6444	82.2127	2015/7/6
Noname	30.9315	81.2998	2015/7/6
Gaerhe River	32.0135	80.1113	2015/7/6
Shiquanhe River	32.5002	80.0923	2015/7/6
Noname	33.0217	79.8075	2015/7/6
Noname	35.6108	79.5215	2015/7/6
Kelakeshi River	35.9878	79.1797	2015/7/13
Kelakeshi River	36.3809	77.9838	2015/7/13

Noname	36.3983	77.9551	2015/7/13
Noname	36.4165	77.6254	2015/7/13
Yeerqiang River	36.4376	77.4348	2015/7/13
Yeerqiang River	36.4578	77.0998	2015/7/13
Yeerqiang River	36.4463	77.0061	2015/7/13
Noname	36.5586	77.1354	2015/7/13
Noname	37.3219	77.1450	2015/7/13
Noname	37.7525	77.4193	2015/7/13
Noname	37.9434	77.3693	2015/7/13
Noname	38.0376	77.3243	2015/7/14
Yehe River	38.2596	77.2774	2015/7/14
Bachubin River	39.7928	78.5497	2015/7/14
Kashigaer River	39.8725	79.0148	2015/7/14
Keliegen River	39.8346	79.0152	2015/7/14
Noname	40.3951	80.2124	2015/7/14
Kashigaer River	40.3980	80.3715	2015/7/14
Yeerqiang River	40.4165	80.4572	2015/7/14
Yeerqiang River	40.4221	80.5500	2015/7/14
Noname	40.3983	80.7393	2015/7/14
Akesu River	40.4785	80.8278	2015/7/15
Noname	41.7819	84.2065	2015/7/15
Noname	41.8632	84.4236	2015/7/15
Kongque River	41.8201	86.3013	2015/7/15
Kongque River	41.8265	86.7439	2015/7/15
Kaidu River	41.9006	86.6863	2015/7/15
Noname	42.3810	86.3260	2015/7/15
Wulasitai River	42.4525	86.2368	2015/7/15
Noname	42.8414	86.3534	2015/7/15
Noname	43.2125	84.7762	2015/7/16
Gongnaisi River	43.2679	84.5669	2015/7/16
Nalati River	43.3163	84.0122	2015/7/16
Noname	43.5199	83.4749	2015/7/16
Gongnaisi River	43.5330	83.1426	2015/7/16
Tekesi River	43.4198	82.4867	2015/7/16
Noname	43.6269	81.7951	2015/7/17
Yili River	43.9190	81.1099	2015/7/17
Jing River	44.6918	82.8296	2015/7/17
Noname	46.9971	87.7071	2015/7/17
Wulungu River	47.0985	87.4820	2015/7/17
Buerjin River	47.7128	86.8392	2015/7/17
Irtys River	47.6919	86.8746	2015/7/17
Noname	46.1286	85.4303	2015/7/17
Baiyang River	46.1388	85.3703	2015/7/18
Noname	44.5487	85.8864	2015/7/18

Nanasi River	44.4204	86.1119	2015/7/18
Jiahe River	44.4564	86.1278	2015/7/18
Toutun River	44.0993	87.4713	2015/7/18
Noname	44.0418	87.4949	2015/7/18
Noname	43.6356	87.6354	2015/7/18
Dujiang River	45.9820	124.0130	2015/9/7
Wuyuer River	47.3017	124.4602	2015/9/13
Nenjiang River	47.3771	123.9186	2015/9/13
Liuhe River	42.3631	122.5051	2015/9/29
Daling River	41.6525	121.0274	2015/9/29
Yang River	40.5161	115.1253	2015/10/1
Xiaoyang River	40.5332	115.1433	2015/10/1
Hengshan River	39.4720	113.8847	2015/10/1
Daying River	39.2878	113.7550	2015/10/1
Putao River	39.1964	113.8612	2015/10/1
Wentangsi River	39.0423	114.0173	2015/10/1
Tanghe River	38.8448	114.8396	2015/10/2
Anyang River	36.1170	114.3429	2015/10/4
Yuxiuyuan River	35.9287	114.3571	2015/10/4
Noname	35.9206	114.2826	2015/10/4
Qihe River	35.7211	114.2652	2015/10/4
Yellow River	34.8761	112.5503	2015/10/5
Yellow River	34.9153	112.5148	2015/10/5
Yellow River	34.9302	112.4869	2015/10/5
Luohe River	34.6846	112.5376	2015/10/5
Noname	34.1608	112.4946	2015/10/5
Nanhe River	33.3584	112.4118	2015/10/6
Bai River	33.2833	112.6329	2015/10/6
Nanyang River	33.0432	112.5545	2015/10/6
Noname	32.6274	111.7940	2015/10/6
Hanjiang River	32.0185	112.1284	2015/10/10
Yangtze River	30.5635	114.2980	2015/10/10
Yangtze River	30.6004	114.3237	2015/10/10
Yangtze River	30.8329	110.9791	2015/10/15
Yangtze River	30.9682	110.6129	2015/10/15
Yangtze River	31.0462	110.3838	2015/10/15
Yangtze River	30.9324	108.6881	2015/10/15
Qinglong River	25.7927	105.1500	2015/10/19
Daguang River	25.0388	102.6885	2015/10/19
Noname	26.2359	101.7951	2015/10/22
Noname	26.8088	101.7868	2015/10/22
Santan River	26.7678	101.8177	2015/10/22
Yalongjiang River	26.7144	101.8503	2015/10/22
Jin River	26.6971	101.8436	2015/10/22

Xinzhuang River	26.5940	101.3418	2015/10/22
Noname	26.4499	101.0240	2015/10/22
Jinniu River	25.8226	100.5750	2015/10/24
Noname	26.1945	100.5897	2015/10/24
Nanpanjiang River	23.8765	103.4947	2015/10/24
Chengbihe River	23.9935	106.6171	2015/10/24
Chengbihe River	23.9867	106.6256	2015/10/24
Chengbihe River	23.9812	106.6342	2015/10/24
Yongjiang River	23.8935	106.6353	2015/10/24
Noname	22.7788	109.0483	2015/10/25
Qingjiang River	22.7218	109.3189	2015/10/25
Yuxiu River	22.8588	110.5585	2015/10/28
Nanshan River	22.9436	112.0536	2015/10/28
Xijiang River	23.0395	112.4552	2015/10/28
Noname	23.8431	114.0397	2015/10/28
Noname	23.7127	114.1094	2015/10/28
Dongjiang River	23.7539	114.7185	2015/10/29
Suichuan River	26.4662	114.7388	2015/10/29
Noname	29.2303	115.2629	2015/10/29
Paihe River	31.6665	117.2925	2015/10/30
Nanfeihe River	31.8786	117.2360	2015/10/30

Table S5 the comparison of regression model parameters (i.e., coefficient of determination (R^2), slope, and intercept) from $a_{CDOM(275)}$ and $a_{CDOM(440)}$ against DOC that all derived from Figure 3 and Figure 6. Note, Slp denotes slope; Int denotes intercept.

Water body type	$a_{CDOM(275)}$				$a_{CDOM(440)}$			
	R^2	Slp	Int	p -value	R^2	Slp	Int	p -value
Fresh water lakes	0.85	2.57	0.84	0.001	0.75	0.18	-0.43	0.001
Saline water lakes	0.85	1.28	0.67	0.001	0.71	0.07	-0.03	0.001
River-stream waters	0.81	3.01	-0.29	0.001	0.63	0.12	-0.15	0.01
Urban waters	0.71	1.03	3.09	0.001	0.67	0.07	0.03	0.001
Ice covered lake	0.93	1.27	9.56	0.001	0.80	0.08	0.22	0.001
Ice melting lake	0.89	1.35	-0.12	0.001	0.80	0.14	-0.04	0.001

Table S6 the comparison of regression model metrics (i.e., coefficient of determination (R^2), slope, intercept and p -values) from $a_{CDOM}(275)$ and $a_{CDOM}(440)$ against DOC that all derived from Fig.3b-f, and Fig.6b-f with some samples regarded as outliers. Two samples with DOC concentration greater than 200 mg/L in Fig.3b and Fig.6b was removed as outlier; the sample with the largest DOC concentration in Fig.3c and Fig.6c was removed as outlier; three samples with DOC concentration greater than 100 mg/L in Fig.3d and Fig.6d were removed as outliers; four samples with DOC concentration greater than 200 mg/L were removed as outliers in Fig.3e and Fig.6e; and one sample with the greatest DOC concentration in Fig.3f and Fig.6f was removed as outlier. Note, Slp denotes slope; Int denotes intercept.

Water body type	$a_{CDOM}(275)$				$a_{CDOM}(440)$			
	R^2	Slp	Int	p -value	R^2	Slp	Int	p -value
Saline water lakes	0.80	1.16	3.30	0.001	0.60	0.06	0.19	0.01
River-stream waters	0.75	3.14	-1.58	0.001	0.54	0.11	-0.05	0.01
Urban waters	0.62	1.18	1.57	0.01	0.63	0.08	-0.15	0.01
Ice covered lake	0.67	1.17	13.14	0.001	0.52	0.09	-0.11	0.01
Ice melting lake	0.80	1.38	-0.20	0.001	0.72	0.13	-0.05	0.001