Table Main site characteristics, climatic indexes, and studied periods of flux sites used in this analysis. All the data gathered from www.fluxdata.org.

Site name	Veg[1]	Lat[2]	Lon[3]	Clim[4]	Period	Ref[5]
AR-SLu	MF	-33.4648	-66.4598	Unk	2009-2011	[Ulke et al., 2015]
AR-Vir	ENF	-28.2395	-56.1886	Unk	2009-2012	[Posse et al., 2016]
AT-Neu	GRA	47.1167	11.3175	Unk	2002-2012	[Wohlfahrt et al., 2008]
AU-Ade	WSA	-13.0769	131.1178	Unk	2007-2009	[Beringer et al., 2011a]
AU-ASM	ENF	-22.2830	133.2490	Unk	2010-2013	[Cleverly et al., 2013]
AU-Cpr	SAV	-34.0021	140.5891	Unk	2010-2014	[Meyer et al., 2015]
AU-Cum	EBF	-33.6133	150.7225	Unk	2012-2014	[Beringer et al., 2016a]
AU-DaP	GRA	-14.0633	131.3181	Aw	2007-2013	[Beringer et al., 2011b]
AU-DaS	SAV	-14.1593	131.3881	Aw	2008-2014	[Hutley et al., 2011]
AU-Dry	SAV	-15.2588	132.3706	Unk	2008-2014	[Cernusak et al., 2011]
AU-Emr	GRA	-23.8587	148.4746	Unk	2011-2013	–
AU-Fog	WET	-12.5452	131.3072	Aw	2006-2008	[Beringer et al., 2013]
AU-Gin	WSA	-31.3764	115.7138	Unk	2011-2014	–
AU-GWW	SAV	-30.1913	120.6541	Unk	2013-2014	–
AU-How	WSA	-12.4943	131.1523	Aw	2001-2014	[BERINGER et al., 2007]
AU-Lox	DBF	-34.4704	140.6551	Unk	2008-2009	[Stevens et al., 2011]
AU-RDF	WSA	-14.5636	132.4776	Unk	2011-2013	[Bristow et al., 2016]
AU-Rig	GRA	-36.6499	145.5759	Unk	2011-2014	[Beringer et al., 2016b]
AU-Rob	EBF	-17.1175	145.6301	Unk	2014-2014	[Beringer et al., 2016c]
AU-Stp	GRA	-17.1507	133.3502	Unk	2008-2014	[Beringer et al., 2011c]
AU-TTE	OSH	-22.2870	133.6400	Unk	2012-2013	–
AU-Tum	EBF	-35.6566	148.1517	Cfb	2001-2014	[Leuning et al., 2005]
AU-Wac	EBF	-37.4259	145.1878	Cfb	2005-2008	[Kilinc et al., 2013]
AU-Whr	EBF	-36.6732	145.0294	Unk	2011-2014	[McHugh et al., 2017]
AU-Wom	EBF	-37.4222	144.0944	Unk	2010-2012	–
AU-Ync	GRA	-34.9893	146.2907	Unk	2012-2014	[Yee et al., 2015]
BE-Bra	MF	51.3092	4.5206	Unk	1996-2014	[Carrara et al., 2004]
BE-Lon	CRO	50.5516	4.7461	Cfb	2004-2014	[Moureaux et al., 2006]
BE-Vie	MF	50.3051	5.9981	Cfb	1996-2014	[Aubinet et al., 2001]
BR-Sa3	EBF	-3.0180	-54.9714	Am	2000-2004	[Wick et al., 2005]
CA-Man	ENF	55.8796	-98.4808	Dfc	1994-2008	[DUNN et al., 2007]
CA-NS1	ENF	55.8792	-98.4839	Dfc	2001-2005	[GOULDEN et al., 2006a]
CA-NS2	ENF	55.9058	-98.5247	Dfc	2001-2005	[GOULDEN et al., 2006b]
CA-NS3	ENF	55.9117	-98.3822	Dfc	2001-2005	[GOULDEN et al., 2006c]
CA-NS4	ENF	55.9144	-98.3806	Dfc	2002-2005	[GOULDEN et al., 2006d]
CA-NS5	ENF	55.8631	-98.4850	Dfc	2001-2005	[GOULDEN et al., 2006e]
CA-NS6	OSH	55.9167	-98.9644	Dfc	2001-2005	[GOULDEN et al., 2006f]
CA-NS7	OSH	56.6358	-99.9483	Dfc	2002-2005	[GOULDEN et al., 2006g]
CA-Qfo	ENF	49.6925	-74.3421	Dfc	2003-2010	[BERGERON et al., 2007]
CA-SF1	ENF	54.4850	-105.8176	Dfc	2003-2006	[Mkhabela et al., 2009a]
CA-SF2	ENF	54.2539	-105.8775	Dfc	2001-2005	[Mkhabela et al., 2009b]
CA-SF3	OSH	54.0916	-106.0053	Dfc	2001-2006	[Mkhabela et al., 2009c]
CH-Cha	GRA	47.2102	8.4104	Unk	2005-2014	[Merbold et al., 2014]
CH-Dav	ENF	46.8153	9.8559	Unk	1997-2014	[Zielis et al., 2014]
CH-Fru	GRA	47.1158	8.5378	Unk	2005-2014	[Imer et al., 2013]
CH-Lae	MF	47.4781	8.3650	Unk	2004-2014	[Etzold et al., 2011]

Site name	Veg[1]	Lat[2]	Lon[3]	Clim[4]	Period	Ref[5]
CH-Oe1	GRA	47.2858	7.7319	Unk	2002-2008	[Ammann et al., 2009]
CH-Oe2	CRO	47.2863	7.7343	Unk	2004-2014	[Dietiker et al., 2010]
CN-Cha	MF	42.4025	128.0958	Dwb	2003-2005	[Guan et al., 2006]
CN-Cng	GRA	44.5934	123.5092	Unk	2007-2010	–
CN-Dan	GRA	30.4978	91.0664	ET	2004-2005	[Shi et al., 2006]
CN-Din	EBF	23.1733	112.5361	Cfa	2003-2005	–
CN-Du2	GRA	42.0467	116.2836	Dwb	2006-2008	[Chen et al., 2009]
CN-Ha2	WET	37.6086	101.3269	Unk	2003-2005	–
CN-HaM	GRA	37.3700	101.1800	ET	2002-2004	[KATO et al., 2006]
CN-Qia	ENF	26.7414	115.0581	Cfa	2003-2005	–
CN-Sw2	GRA	41.7902	111.8971	Unk	2010-2012	–
CZ-BK1	ENF	49.5021	18.5369	Unk	2004-2008	[Acosta et al., 2013]
CZ-BK2	GRA	49.4944	18.5429	Unk	2004-2006	–
CZ-wet	WET	49.0247	14.7704	Unk	2006-2014	[Dušek et al., 2012]
DE-Akm	WET	53.8662	13.6834	Cfb	2009-2014	–
DE-Geb	CRO	51.1001	10.9143	Unk	2001-2014	[Anthoni et al., 2004]
DE-Gri	GRA	50.9500	13.5126	Cfb	2004-2014	[Prescher et al., 2010a]
DE-Hai	DBF	51.0792	10.4530	Unk	2000-2012	[Knohl et al., 2003]
DE-Kli	CRO	50.8931	13.5224	Cfb	2004-2014	[Prescher et al., 2010b]
DE-Lkb	ENF	49.0996	13.3047	Unk	2009-2013	[Lindauer et al., 2014]
DE-Obe	ENF	50.7867	13.7213	Cfb	2008-2014	–
DE-RuR	GRA	50.6219	6.3041	Unk	2011-2014	[Post et al., 2015]
DE-RuS	CRO	50.8659	6.4472	Cfb	2011-2014	[Mauder et al., 2013]
DE-Seh	CRO	50.8706	6.4497	Unk	2007-2010	[Schmidt et al., 2012]
DE-SfN	WET	47.8064	11.3275	Unk	2012-2014	[Hommeltenberg et al., 2014]
DE-Spw	WET	51.8923	14.0337	Cfb	2010-2014	–
DE-Tha	ENF	50.9624	13.5652	Cfb	1996-2014	[Grünwald and Bernhofer, 2007]
DK-Fou	CRO	56.4842	9.5872	Unk	2005-2005	–
DK-NuF	WET	64.1308	-51.3861	ET	2008-2014	[Westergaard-Nielsen et al., 2013]
DK-Sor	DBF	55.4859	11.6446	Unk	1996-2014	[Pilegaard et al., 2011]
DK-ZaF	WET	74.4814	-20.5545	ET	2008-2011	[Stiegler et al., 2016]
DK-ZaH	GRA	74.4732	-20.5503	ET	2000-2014	[Lund et al., 2012]
ES-LgS	OSH	37.0979	-2.9658	Unk	2007-2009	[Reverter et al., 2010]
ES-Ln2	OSH	36.9695	-3.4758	Unk	2009-2009	–
FI-Hyy	ENF	61.8474	24.2948	Unk	1996-2014	–
FI-Jok	CRO	60.8986	23.5135	Unk	2000-2003	[Lohila, 2004]
FI-Lom	WET	67.9972	24.2092	Unk	2007-2009	–
FI-Sod	ENF	67.3619	26.6378	Unk	2001-2014	[Thum et al., 2007]
FR-Fon	DBF	48.4764	2.7801	Cfb	2005-2014	[Delpierre et al., 2015]
FR-Gri	CRO	48.8442	1.9519	Cfb	2004-2013	[Loubet et al., 2011]
FR-LBr	ENF	44.7171	-0.7693	Unk	1996-2008	[Berbigier et al., 2001]
FR-Pue	EBF	43.7414	3.5958	Unk	2000-2014	[Rambal et al., 2004]
GF-Guy	EBF	5.2788	-52.9249	Unk	2004-2014	[BONAL et al., 2008]
IT-BCi	CRO	40.5238	14.9574	Unk	2004-2014	[Vitale et al., 2015]
IT-CA1	DBF	42.3804	12.0266	Unk	2011-2014	[Sabbatini et al., 2016a]
IT-CA2	CRO	42.3772	12.0260	Unk	2011-2014	[Sabbatini et al., 2016b]
IT-CA3	DBF	42.3800	12.0222	Unk	2011-2014	[Sabbatini et al., 2016c]
IT-Col	DBF	41.8494	13.5881	Unk	1996-2014	[VALENTINI et al., 1996]
IT-Cp2	EBF	41.7043	12.3573	Unk	2012-2014	[Fares et al., 2014]

Site name	Veg[1]	Lat[2]	Lon[3]	Clim[4]	Period	Ref[5]
IT-Cpz	EBF	41.7052	12.3761	Unk	1997-2009	[GARBULSKY et al., 2008]
IT-Isp	DBF	45.8126	8.6336	Unk	2013-2014	[Ferréa et al., 2012]
IT-La2	ENF	45.9542	11.2853	Unk	2000-2002	[Marcolla et al., 2003a]
IT-Lav	ENF	45.9562	11.2813	Unk	2003-2014	[Marcolla et al., 2003b]
IT-MBo	GRA	46.0147	11.0458	Unk	2003-2013	[Marcolla et al., 2011]
IT-Noe	CSH	40.6061	8.1515	Unk	2004-2014	[Papale et al., 2014]
IT-PT1	DBF	45.2009	9.0610	Unk	2002-2004	[Migliavacca et al., 2009]
IT-Ren	ENF	46.5869	11.4337	Unk	1998-2013	[Montagnani et al., 2009]
IT-Ro1	DBF	42.4081	11.9300	Unk	2000-2008	[Rey et al., 2002]
IT-Ro2	DBF	42.3903	11.9209	Unk	2002-2012	[TEDESCHI et al., 2006]
IT-SR2	ENF	43.7320	10.2910	Unk	2013-2014	–
IT-SRo	ENF	43.7279	10.2844	Unk	1999-2012	[Chiesi et al., 2005]
IT-Tor	GRA	45.8444	7.5781	Unk	2008-2014	[Galvagno et al., 2013]
JP-MBF	DBF	44.3869	142.3186	Unk	2003-2005	[Matsumoto et al., 2008a]
JP-SMF	MF	35.2617	137.0788	Unk	2002-2006	[Matsumoto et al., 2008b]
NL-Hor	GRA	52.2404	5.0713	Unk	2004-2011	[Jacobs et al., 2007]
NL-Loo	ENF	52.1666	5.7436	Unk	1996-2013	–
NO-Adv	WET	78.1860	15.9230	Unk	2011-2014	–
NO-Blv	SNO	78.9216	11.8311	Unk	2008-2009	[Lüers et al., 2014]
RU-Che	WET	68.6130	161.3414	Unk	2002-2005	[MERBOLD et al., 2009]
RU-Cok	OSH	70.8291	147.4943	Unk	2003-2014	[van der Molen et al., 2007]
RU-Fyo	ENF	56.4615	32.9221	Unk	1998-2014	[Kurbatova et al., 2008]
RU-Ha1	GRA	54.7252	90.0022	Dfc	2002-2004	[Marchesini et al., 2007]
SD-Dem	SAV	13.2829	30.4783	Unk	2005-2009	[Ardo et al., 2008]
SN-Dhr	SAV	15.4028	-15.4322	Unk	2010-2013	[Tagesson et al., 2014]
US-AR1	GRA	36.4267	-99.4200	Dsa	2009-2012	[Raz-Yaseef et al., 2015a]
US-AR2	GRA	36.6358	-99.5975	Dsa	2009-2012	[Raz-Yaseef et al., 2015b]
US-ARb	GRA	35.5497	-98.0402	Cfa	2005-2006	[Raz-Yaseef et al., 2015c]
US-ARc	GRA	35.5465	-98.0400	Cfa	2005-2006	[Raz-Yaseef et al., 2015d]
US-ARM	CRO	36.6058	-97.4888	Cfa	2003-2012	[Fischer et al., 2007]
US-Blo	ENF	38.8953	-120.6328	Csa	1997-2007	[Goldstein et al., 2000]
US-Cop	GRA	38.0900	-109.3900	Unk	2001-2007	[Bowling et al., 2010]
US-GBT	ENF	41.3658	-106.2397	Dfc	1999-2006	[Zeller and Nikolov, 2000]
US-GLE	ENF	41.3665	-106.2399	Dfc	2004-2014	[Frank et al., 2014]
US-Ha1	DBF	42.5378	-72.1715	Dfb	1991-2012	[Urbanski et al., 2007]
US-KS2	CSH	28.6086	-80.6715	Cwa	2003-2006	[Powell et al., 2006]
US-Los	WET	46.0827	-89.9792	Dfb	2000-2014	[Sulman et al., 2009]
US-Me1	ENF	44.5794	-121.5000	Csb	2004-2005	[IRVINE et al., 2007]
US-Me2	ENF	44.4523	-121.5574	Csb	2002-2014	[IRVINE et al., 2008]
US-Me6	ENF	44.3233	-121.6078	Csb	2010-2014	[Ruehr et al., 2012]
US-MMS	DBF	39.3232	-86.4131	Cfa	1999-2014	[DRAGONI et al., 2011]
US-Myb	WET	38.0498	-121.7651	Csa	2010-2014	[Matthes et al., 2014]
US-Ne1	CRO	41.1651	-96.4766	Dfa	2001-2013	[Verma et al., 2005a]
US-Ne2	CRO	41.1649	-96.4701	Dfa	2001-2013	[Verma et al., 2005b]
US-Ne3	CRO	41.1797	-96.4397	Dfa	2001-2013	[Verma et al., 2005c]
US-NR1	ENF	40.0329	-105.5464	Dfc	1998-2014	[Monson et al., 2002]
US-ORv	WET	40.0201	-83.0183	Cfa	2011-2011	[Morin et al., 2014]
US-PFa	MF	45.9459	-90.2723	Dfb	1995-2014	[Desai et al., 2015]
US-Prr	ENF	65.1237	-147.4876	Dwc	2010-2013	[Nakai et al., 2013]

Site name	Veg[1]	Lat[2]	Lon[3]	Clim[4]	Period	Ref[5]
US-SRG	GRA	31.7894	-110.8277	Bsk	2008-2014	[Scott et al., 2015a]
US-SRM	WSA	31.8214	-110.8661	Bsk	2004-2014	[Scott et al., 2009]
US-Syv	MF	46.2420	-89.3477	Dfb	2001-2014	[Desai et al., 2005]
US-Ton	WSA	38.4316	-120.9660	Csa	2001-2014	[Baldocchi et al., 2010]
US-Tw1	WET	38.1074	-121.6469	Csa	2012-2014	[Oikawa et al., 2017]
US-Tw2	CRO	38.1047	-121.6433	Csa	2012-2013	[Knox et al., 2016]
US-Tw3	CRO	38.1159	-121.6467	Csa	2013-2014	[Baldocchi et al., 2015]
US-Tw4	WET	38.1030	-121.6414	Csa	2013-2014	[Baldocchi, 2016]
US-Twt	CRO	38.1087	-121.6530	Csa	2009-2014	[Hatala et al., 2012]
US-UMB	DBF	45.5598	-84.7138	Dfb	2000-2014	[Gough et al., 2013a]
US-UMd	DBF	45.5625	-84.6975	Dfb	2007-2014	[Gough et al., 2013b]
US-Var	GRA	38.4133	-120.9507	Csa	2000-2014	[Ma et al., 2007]
US-WCr	DBF	45.8059	-90.0799	Dfb	1999-2014	[Cook et al., 2004]
US-Whs	OSH	31.7438	-110.0522	Bsk	2007-2014	[Scott et al., 2015b]
US-Wi0	ENF	46.6188	-91.0814	Dfb	2002-2002	[Noormets et al., 2007a]
US-Wi3	DBF	46.6347	-91.0987	Dfb	2002-2004	[Noormets et al., 2007b]
US-Wi4	ENF	46.7393	-91.1663	Dfb	2002-2005	[Noormets et al., 2007c]
US-Wi6	OSH	46.6249	-91.2982	Dfb	2002-2003	[Noormets et al., 2007d]
US-Wi9	ENF	46.6188	-91.0814	Dfb	2004-2005	[Noormets et al., 2007e]
US-Wkg	GRA	31.7365	-109.9419	Bsk	2004-2014	[Scott et al., 2010]
ZA-Kru	SAV	-25.0197	31.4969	Unk	2000-2010	[Archibald et al., 2009]
ZM-Mon	DBF	-15.4378	23.2528	Unk	2000-2009	[Merbold et al., 2009]

[1] Vegetation types: deciduous broadleaf forest (DBF); evergreen broadleaf forest (EBF); evergreen needleleaf forest (ENF); grassland (GRA); mixed deciduous and evergreen needleleaf forest (MF); savanna ecosystem (SAV); shrub ecosystem (SHR); wetland (WET); unknown (UNK). [2] Positive value indicates north latitude. [3] Negative value indicates west longitude. [4] Köppen Climate classification. [5] References.

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