



Supplement of

Decadal trends in global CO emissions as seen by MOPITT

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Table S1. Surface station of CH₄ measurements used in the inversion

Station	Contributor	Lat	Lon	Alt	Temporal coverage*	Country/Territory	Category
Alert	CSIRO	82.5	-62.5	210		Canada	Global
Alert	EC	82.5	-62.5	210		Canada	Global
Alert	NOAA	82.5	-62.5	210		Canada	Global
Amsterdam island	LSCE	-37.8	77.5	55	2003-2010	France	Global
Arrival Heights	NIWA	-77.8	166.7	184		New Zealand	Regional
Ascension Island	NOAA	-7.9	-14.4	54		UK	Regional
Assekrem	NOAA	23.3	5.6	2710		Algeria	Global
Terceira Island	NOAA	38.8	-27.4	40		Portugal	Regional
Baltic Sea	NOAA	55.4	17.2	28		Poland	Regional
Begur	LSCE	42.0	3.2	13	2001-2010	Spain	Non-GAW
Baring Head	NIWA	-41.4	174.9	85		New Zealand	Regional
Baring Head	NOAA	-41.4	174.9	85		New Zealand	Regional
Bukit Koto Tabang	NOAA	-0.2	100.3	864.5	2004-2011	Indonesia	Global
St. David's Head	NOAA	32.4	-64.7	30	2001-2010	UK	Regional
Tudor Hill	NOAA	32.3	-64.9	30		UK	Regional
Barrow	NOAA	71.3	-156.6	11		USA	Global
Cold Bay	NOAA	55.2	-162.7	25		USA	Regional
Cape Ferguson	CSIRO	-19.3	147.1	2		Australia	Regional
Cape Grim	AGAGE	-40.7	144.7	94		Australia	Global
Cape Grim	CSIRO	-40.7	144.7	94		Australia	Global
Cape Grim	NOAA	-40.7	144.7	94		Australia	Global
Christmas Island	NOAA	1.7	-157.2	3		Kiribati	Regional
Crozet	NOAA	-46.5	51.9	120		France	Regional
Casey Station	CSIRO	-66.3	110.5	60		Australia	Regional
Drake Passage	NOAA	-60.0	-50.0	30	2003-2011	USA	Global
Easter Island	NOAA	-27.1	-109.5	50		Chile	Regional
Estefan Point	EC	49.4	-126.6	39		Canada	Regional
Guam	NOAA	13.4	144.8	2		USA	Regional
Halley Bay	NOAA	-75.6	-26.5	33		UK	Global
Hegyhatsal	NOAA	47.0	16.7	248		Hungary	Regional
Heimaey	NOAA	63.4	-20.3	100		Iceland	Regional
Izana (Tenerife)	NOAA	28.3	-16.5	2367		Spain	Global
Key Biscayne	NOAA	25.7	-80.2	3		USA	Regional
Cape Kumukahi	NOAA	19.5	-154.8	3		USA	Regional
Sary Taukum	NOAA	44.5	75.6	412	2001-2009	Kazakhstan	Regional
Plateau Assy	NOAA	43.3	77.9	2519	2001-2009	Kazakhstan	Regional
Lampedusa	NOAA	35.5	12.6	45	2006-2011	Italy	Regional
Mawson	CSIRO	-67.6	62.9	32		Australia	Regional
Mace Head	AGAGE	53.3	-9.9	25		Ireland	Global
Mace Head	NOAA	53.3	-9.9	25		Ireland	Global
Sand Island	NOAA	28.2	-177.4	7.7		USA	Regional
Mauna Loa	CSIRO	19.5	-155.6	3397		USA	Global
Mauna Loa	NOAA	19.5	-155.6	3397		USA	Global
Macquarie Island	CSIRO	-54.5	159.0	12		Australia	Regional
Niwot Ridge	NOAA	40.1	-105.6	3523		USA	Regional
Orleans	LSCE	47.8	2.5	~	2001-2009	France	Contributing
Ochsenkopf	NOAA	50.0	11.8	1185	2003-2011	Germany	Contributing
Pallas-Sammaltunturi	NOAA	68.0	24.1	560		Finland	Global
Pic du Midi	LSCE	42.9	0.1	2877		France	Contributing
Pacific Ocean	NOAA	~	~	10		USA	Mobile
Parmer Station	NOAA	-64.9	-64.0	10		USA	Regional
Point Arena	NOAA	39.0	-123.7	17		USA	Regional
Puy de Dome	LSCE	45.8	3.0	1465	2001-2010	France	Contributing
Ragged Point	AGAGE	13.2	-59.4	45		Barbados	Regional
Ragged Point	NOAA	13.2	-59.4	45		Barbados	Regional

Mahe Island	NOAA	-4.7	55.2	7		Seychelles	Regional
Southern Great Plains	NOAA	36.8	-97.5	314		USA	Contributing
Shemya Island	NOAA	52.7	174.1	40		USA	Regional
Tutuila	AGAGE	-14.2	-170.6	42		USA	Global
Tutuila	NOAA	-14.2	-170.6	42		USA	Global
South Pole	CSIRO	-90.0	-24.8	2810		USA	Global
South Pole	NOAA	-90.0	-24.8	2810		USA	Global
Ocean Station "M"	NOAA	66.0	2.0	5	2001-2009	Norway	Regional
Summit	NOAA	72.6	-38.5	3238		Denmark	Regional
Syowa Station	NOAA	-69.0	39.6	16		Japan	Regional
Tae-ahn Peninsula	NOAA	36.7	126.1	20		Korea	Regional
Tierra del Fuego	NOAA	-54.9	-68.5	20		Argentina	Regional
Trinidad Head	AGAGE	41.1	-124.2	120		USA	Global
Trinidad Head	NOAA	41.1	-124.2	120		USA	Global
Wendover	NOAA	39.9	-113.7	1320		USA	Regional
Ulaan Uul	NOAA	44.5	111.1	914		Mongolia	Regional
Sede Boker	NOAA	31.1	34.9	400		Israel	Regional
Moody	NOAA	31.3	-97.3	708	2001-2010	USA	Regional
Waliguan	NOAA	36.3	100.9	3810		China	Global
Sable Island	EC	43.9	-60.0	5		Canada	Regional
Zeppelinfjellet	NOAA	78.9	11.9	475		Norway	Global

* Full data coverage of the study period if not indicated specifically.

Table S2. Surface station of MCF measurements used in the inversion

Station	Contributor	Lat	Lon	Alt	Temporal coverage*	Country/Territory	Category
Alert	NOAA	82.5	-62.5	210		Canada	Global
Barrow	NOAA	71.3	-156.6	11		USA	Global
Cape Grim	AGAGE	-40.7	144.7	94		Australia	Global
Cape Grim	NOAA	-40.7	144.7	94		Australia	Global
Cape Kumukahi	NOAA	19.5	-154.8	3		USA	Regional
Everest-Pyramid	UNIURB	28.0	86.8	5079	2006-2011	Nepal	Global
Harvard Forest	NOAA	42.9	-72.3	340		USA	Regional
Jungfrauoch	AGAGE	46.5	8.0	3580		Switzerland	Global
Mace Head	AGAGE	53.3	-9.9	25		Ireland	Global
Mace Head	NOAA	53.3	-9.9	25		Ireland	Global
Mauna Loa	NOAA	19.5	-155.6	3397		USA	Global
Niwot Ridge	NOAA	40.0	-105.5	3021		USA	Regional
Park Falls	NOAA	45.9	-90.3	868		USA	Regional
Parmer Station	NOAA	-64.9	-64.0	10		USA	Regional
Ragged Point	AGAGE	13.2	-59.4	45		Barbados	Regional
Ryori	JMA	39.0	141.8	260		Japan	Regional
South Pole	NOAA	-90.0	-24.8	2810		USA	Global
Summit	NOAA	72.6	-38.5	3238	2006-2011	Denmark	Regional
Tierra del Fuego	NOAA	-54.9	-68.5	20	2004- 2010	Argentina	Regional
Trinidad Head	AGAGE	41.1	-124.2	120		USA	Global
Trinidad Head	NOAA	41.1	-124.2	120		USA	Global
Tutuila	AGAGE	-14.2	-170.6	42		USA	Global
Tutuila	NOAA	-14.2	-170.6	42		USA	Global
Zeppelinfjellet	AGAGE	78.9	11.9	475		Norway	Global

* Full data coverage of the study period if not indicated specifically.

Table S3. Surface station of CO for trend study and cross validation.

Station	Contributor	Lat	Lon	Alt	Temporal coverage*	Country/Territory	Category
Alert	CSIRO	82.5	-62.5	210	2001-2010	Canada	Global
Alert	EC	82.5	-62.5	210		Canada	Global
Alert	NOAA	82.5	-62.5	210		Canada	Global
Arrival Heights	NIWA	-77.8	166.7	184	2004-2011	New Zealand	Regional
Ascension Island	NOAA	-7.9	-14.4	54		UK	Regional
Assekrem	NOAA	23.3	5.6	2710	2005-2011	Algeria	Global
Baltic Sea	NOAA	55.4	17.2	28		Poland	Regional
Baring Head	NIWA	-41.4	174.9	85	2002-2011	New Zealand	Regional
Baring Head	NOAA	-41.4	174.9	85		New Zealand	Regional
Barrow	NOAA	71.3	-156.6	11	2005-2011	USA	Global
Black Sea	NOAA	44.2	28.7	3		Romania	Regional
Bukit Koto Tabang	NOAA	-0.2	100.3	864.5	2005-2011	Indonesia	Global
Cape Ferguson	CSIRO	-19.3	147.1	2		Australia	Regional
Cape Grim	CSIRO	-40.7	144.7	94	2005-2011	Australia	Global
Cape Grim	NOAA	-40.7	144.7	94		Australia	Global
Cape Kumukahi	NOAA	19.5	-154.8	3	2005-2011	USA	Regional
Cape Point	NOAA	-34.4	18.5	230		South Africa	Global
Cape Rama	CSIRO	15.1	73.8	60	2005-2011	India	Contributing
Casey Station	CSIRO	-66.3	110.5	60		Australia	Regional
Christmas Island	NOAA	1.7	-157.2	3	2005-2011	Kiribati	Regional
Cold Bay	NOAA	55.2	-162.7	25		USA	Regional
Crozet	NOAA	-46.5	51.9	120	2005-2011	France	Regional
East Trout Lake	EC	54.4	-105.0	492		Canada	Regional
Easter Island	NOAA	-27.1	-109.5	50	2005-2011	Chile	Regional
Egbert	EC	44.2	-79.8	253		Canada	Regional
Fraserdale	EC	49.9	-81.6	210	2005-2011	Canada	Regional
Guam	NOAA	13.4	144.8	2		USA	Regional
Halley Bay	NOAA	-75.6	-26.5	33	2005-2011	UK	Global
Hegyhatsal	NOAA	47.0	16.7	248		Hungary	Regional
Heimaey	NOAA	63.4	-20.3	100	2005-2011	Iceland	Regional
Izana (Tenerife)	NOAA	28.3	-16.5	2367		Spain	Global
Jungfrauoch	Empa	46.5	8.0	3580	2005-2011	Switzerland	Global
Key Biscayne	NOAA	25.7	-80.2	3		USA	Regional
Kollumerwaard	RIVM	53.3	6.3	0	2005-2011	Netherlands	Regional
Mace Head	AGAGE	53.3	-9.9	8		Ireland	Global
Mace Head	NOAA	53.3	-9.9	8	2005-2011	Ireland	Global
Macquarie Island	CSIRO	-54.5	159.0	12		Australia	Regional
Mahe Island	NOAA	-4.7	55.2	7	2005-2011	Seychelles	Regional
Mauna Loa	CSIRO	19.5	-155.6	3397		USA	Global
Mauna Loa	NOAA	19.5	-155.6	3397	2005-2011	USA	Global
Mawson	CSIRO	-67.6	62.9	32		Australia	Regional
Minamitorishima	JMA	24.3	154.0	8	2005-2011	Japan	Global
Neuglobsow	UBA	53.2	13.0	65		Germany	Regional
Niwot Ridge	NOAA	40.1	-105.6	3523	2005-2011	USA	Regional
Ocean Station "M"	NOAA	66.0	2.0	5		Norway	Regional
Ochsenkopf	NOAA	50.0	11.8	1185	2003-2011	Germany	Contributing
Pacific Ocean	NOAA	0.0	-155.0	10		USA	Mobile
Pallas-Sammaltunturi	NOAA	68.0	24.1	560	2003-2011	Finland	Global
Park Falls	NOAA	45.9	-90.3	868		USA	Regional
Parmer Station	NOAA	-64.9	-64.0	10	2003-2011	USA	Regional
Payerne	Empa	46.8	7.0	490		Switzerland	Regional
Plateau Assy	NOAA	43.3	77.9	2519	2003-2011	Kazakhstan	Regional
Point Arena	NOAA	39.0	-123.7	17		USA	Regional
Ragged Point	NOAA	13.2	-59.4	45	2003-2011	Barbados	Regional
Rigi	Empa	46.1	8.5	1031		Switzerland	Regional

Ryori	JMA	39.0	141.8	260		Japan	Regional
Sable Island	EC	43.9	-60.0	5		Canada	Regional
Sand Island	NOAA	28.2	-177.4	7.7		USA	Regional
Sary Taukum	NOAA	44.5	75.6	412	2001-2009	Kazakhstan	Regional
Schauinsland	UBA	47.9	7.9	1205		Germany	Regional
Sede Boker	NOAA	31.1	34.9	400		Israel	Regional
Shemya Island	NOAA	52.7	174.1	40		USA	Regional
Sonnblick	UBA	47.1	13.0	3106		Austria	Regional
South Pole	CSIRO	-90.0	-24.8	2810		USA	Global
South Pole	NOAA	-90.0	-24.8	2810		USA	Global
Southern Great Plains	NOAA	36.8	-97.5	314		USA	Contributing
St. David's Head	NOAA	32.4	-64.7	30	2001-2010	UK	Regional
Syowa Station	NOAA	-69.0	39.6	16		Japan	Regional
Tae-ahn Peninsula	NOAA	36.7	126.1	20		Korea	Regional
Terceira Island	NOAA	38.8	-27.4	40		Portugal	Regional
Tierra del Fuego	NOAA	-54.9	-68.5	20		Argentina	Regional
Trinidad Head	NOAA	41.1	-124.2	120		USA	Global
Tudor Hill	NOAA	32.3	-64.9	30		UK	Regional
Tutuila	NOAA	-14.2	-170.6	42		USA	Global
Ulaan Uul	NOAA	44.5	111.1	914		Mongolia	Regional
Waliguan	NOAA	36.3	100.9	3810		China	Global
Wendover	NOAA	39.9	-113.7	1320		USA	Regional
Yonagunijima	JMA	24.5	123.0	30		Japan	Regional
Zeppelinfjellet	NOAA	78.9	11.9	475		Norway	Global

* Full data coverage of the study period if not indicated specifically.