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Supplement of

Terrestrial Ecosystem Model in R (TEMIR) version 1.0: simulating ecophysiological responses of vegetation to atmospheric chemical and meteorological changes

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Supplementary materials of manuscript "Terrestrial Ecosystem Model in R version 1.0: Simulating ecophysiological responses of vegetation to atmospheric chemical and meteorological changes" authored by Tai, A. P. K., Yung, D. H. Y., and Lam, T.

Table S1: Bare land and plant functional type (PFT) classification, identification and matching between the PFTs used in the Community Land Model version 4.5 (CLM4.5) and International Geosphere Biosphere Program Data and Information System (IGBP-DIS) DISCover land cover dataset.

CLM PFT	**IGBP-DIS PFT**	**IGBP-DIS PFT Abbreviation**
Bare land	*Not classified*	*Not classified*
Needleleaf evergreen tree – temperate	Evergreen Needleleaf Forest	ENF
Needleleaf evergreen tree - boreal	Evergreen Needleleaf Forest	ENF
Needleleaf deciduous tree – boreal	*Not classified*	*Not classified*
Broadleaf evergreen tree – tropical	Evergreen Broadleaf Forest	EBF
Broadleaf evergreen tree – temperate	Evergreen Broadleaf Forest	EBF
Broadleaf deciduous tree – tropical	Deciduous Broadleaf Forest	DBF
Broadleaf deciduous tree – temperate	Deciduous Broadleaf Forest	DBF
Broadleaf deciduous tree – boreal	Deciduous Broadleaf Forest	DBF
Broadleaf evergreen shrub - temperate	*Not classified*	*Not classified*
Broadleaf deciduous shrub – temperate	Open Shrubland	OSH
Broadleaf deciduous shrub – boreal	Closed Shrubland	CSH
C3 arctic grass	Grassland	GRA
C3 grass	Grassland	GRA
C4 grass	Grassland	GRA
C3 Unmanaged Rainfed Crop	Cropland	CRO
C3 Unmanaged Irrigated Crop	Cropland	CRO
Rainfed Corn	-	-
Irrigated Corn	-	-
Rainfed Temperate Cereals	-	-
Irrigated Temperate Cereals	-	-
Rainfed Winter Cereals	-	-
Irrigated Winter Cereals	-	-
Rainfed Soybean	-	-
Irrigated Soybean	-	-

Table S2: Selected plant functional type specific parameters: z_{top} and z_{bot} are respectively canopy height at top and bottom of the canopy, R_{z0m} and R_d are the ratios of momentum roughness length and displacement height to canopy top height, respectively, ψ_c and ψ_o are the soil water potential when stomata are fully closed or fully open respectively

CLM PFT	z_{top} **(m)**	z_{bot} **(m)**	R_{z0m}	R_d	ψ_c **(mm)**	ψ_o **(mm)**
Needleleaf evergreen tree – temperate	17	8.5	0.055	0.67	–255000	–66000
Needleleaf evergreen tree - boreal	17	8.5	0.055	0.67	–255000	–66000
Needleleaf deciduous tree – boreal	14	7	0.055	0.67	–255000	–66000
Broadleaf evergreen tree – tropical	35	1	0.075	0.67	–255000	–66000
Broadleaf evergreen tree – temperate	35	1	0.075	0.67	–224000	–66000
Broadleaf deciduous tree – tropical	18	10	0.055	0.67	–224000	–35000
Broadleaf deciduous tree – temperate	20	11.5	0.055	0.67	–224000	–35000
Broadleaf deciduous tree – boreal	20	11.5	0.055	0.67	–428000	–35000
Broadleaf evergreen shrub - temperate	0.5	0.1	0.12	0.68	–428000	–83000
Broadleaf deciduous shrub – temperate	0.5	0.1	0.12	0.68	–428000	–83000
Broadleaf deciduous shrub – boreal	0.5	0.1	0.12	0.68	–428000	–83000
C3 arctic grass	0.5	0.01	0.12	0.68	–275000	–74000
C3 grass	0.5	0.01	0.12	0.68	–275000	–74000
C4 grass	0.5	0.01	0.12	0.68	–275000	–74000
C3 Unmanaged Rainfed Crop	0.5	0.01	0.12	0.68	–275000	–74000
C3 Unmanaged Irrigated Crop	0.5	0.01	0.12	0.68	–275000	–74000
Rainfed Corn	-	-	0.12	0.68	–275000	–74000
Irrigated Corn	-	-	0.12	0.68	–275000	–74000
Rainfed Temperate Cereals	-	-	0.12	0.68	–275000	–74000
Irrigated Temperate Cereals	-	-	0.12	0.68	–275000	–74000
Rainfed Winter Cereals	-	-	0.12	0.68	–275000	–74000
Irrigated Winter Cereals	-	-	0.12	0.68	–275000	–74000
Rainfed Soybean	-	-	0.12	0.68	–275000	–74000
Irrigated Soybean	-	-	0.12	0.68	–275000	–74000

Table S3: Information of FLUXNET sites relevant for our simulations and model-observation comparison.

Site ID	Site Name	Site Latitude	Site Longitude	IGBP-DIS PFT Code	Simulation Period	
					Diurnal Analysis (M– yyyy)	**Seasonal Analysis (yyyy – yyyy)**
AU-DaP	Daly River Savanna	-14.0633	131.3181	GRA	January – 2012	2009 – 2013
AU-DaS	Daly River Cleared	-14.1593	131.3881	GRA	January – 2012	2009 – 2013
AU-Dry	Dry River	-15.2588	132.3706	GRA	January – 2012	2009 – 2013
AU-How	Howard Springs	-12.4943	131.1523	GRA	January – 2012	2009 – 2013
AU-Stp	Sturt Plains	-17.1507	133.3502	GRA	January – 2012	2009 – 2013
AU-Tum	Tumbarumba	-35.6566	148.1517	EBF	January – 2012	2009 – 2013
BE-Lon	Lonzee	50.5516	4.7461	CRO	July – 2012	2009 – 2013
CA-TP1	Ontario - Turkey Point 2002 Plantation White Pine	42.6609	-80.5595	ENF	July – 2012	2009 – 2013
CA-TP3	Ontario - Turkey Point 1974 Plantation White Pine	42.7068	-80.3483	ENF	July – 2012	2009 – 2013
CA-TP4	Ontario - Turkey Point 1939 Plantation White Pine	42.7102	-80.3574	ENF	July – 2012	2009 – 2013
CH-Cha	Chamau	47.2102	8.4104	GRA	July – 2012	2009 – 2013
CH-Dav	Davos- Seehorn forest	46.8153	9.8559	ENF	July – 2012	2009 – 2013
CH-Fru	Früebüel	47.1158	8.5378	GRA	July – 2012	2009 – 2013
CH-Oe2	Oensingen2 crop	47.2863	7.7343	CRO	July – 2012	2009 – 2013
CZ-wet	CZECHWET	49.0247	14.7704	GRA	July – 2012	2009 – 2013
DE-Akm	Anklam	53.8662	13.6834	GRA	July – 2012	2009 – 2013

Table S2: Selected plant functional type specific parameters: z_{top} and z_{bot} are respectively canopy height at top and bottom of the canopy, R_{z0m} and R_d are the ratios of momentum roughness length and displacement height to canopy top height, respectively, ψ_c and ψ_o are the soil water potential when stomata are fully closed or fully open respectively

CLM PFT	z_{top} **(m)**	z_{bot} **(m)**	R_{z0m}	R_d	ψ_c **(mm)**	ψ_o **(mm)**
Needleleaf evergreen tree – temperate	17	8.5	0.055	0.67	–255000	–66000
Needleleaf evergreen tree - boreal	17	8.5	0.055	0.67	–255000	–66000
Needleleaf deciduous tree – boreal	14	7	0.055	0.67	–255000	–66000
Broadleaf evergreen tree – tropical	35	1	0.075	0.67	–255000	–66000
Broadleaf evergreen tree – temperate	35	1	0.075	0.67	–224000	–66000
Broadleaf deciduous tree – tropical	18	10	0.055	0.67	–224000	–35000
Broadleaf deciduous tree – temperate	20	11.5	0.055	0.67	–224000	–35000
Broadleaf deciduous tree – boreal	20	11.5	0.055	0.67	–428000	–35000
Broadleaf evergreen shrub - temperate	0.5	0.1	0.12	0.68	–428000	–83000
Broadleaf deciduous shrub – temperate	0.5	0.1	0.12	0.68	–428000	–83000
Broadleaf deciduous shrub – boreal	0.5	0.1	0.12	0.68	–428000	–83000
C3 arctic grass	0.5	0.01	0.12	0.68	–275000	–74000
C3 grass	0.5	0.01	0.12	0.68	–275000	–74000
C4 grass	0.5	0.01	0.12	0.68	–275000	–74000
C3 Unmanaged Rainfed Crop	0.5	0.01	0.12	0.68	–275000	–74000
C3 Unmanaged Irrigated Crop	0.5	0.01	0.12	0.68	–275000	–74000
Rainfed Corn	-	-	0.12	0.68	–275000	–74000
Irrigated Corn	-	-	0.12	0.68	–275000	–74000
Rainfed Temperate Cereals	-	-	0.12	0.68	–275000	–74000
Irrigated Temperate Cereals	-	-	0.12	0.68	–275000	–74000
Rainfed Winter Cereals	-	-	0.12	0.68	–275000	–74000
Irrigated Winter Cereals	-	-	0.12	0.68	–275000	–74000
Rainfed Soybean	-	-	0.12	0.68	–275000	–74000
Irrigated Soybean	-	-	0.12	0.68	–275000	–74000

Table S3 Cont.

Site ID	Site Name	Site Latitude	Site Longitude	IGBP-DIS PFT Code	Simulation Period	
					Diurnal Analysis (M– yyyy)	Seasonal Analysis (yyyy– yyyy)
DE-Geb	Gebesee	51.1001	10.9143	CRO	July – 2012	2009 – 2013
DE-Gri	Grillenburg	50.9495	13.5125	GRA	July – 2012	2009 – 2013
DE-Hai	Hainich	51.0792	10.453	DBF	July – 2012	2009 – 2013
DE-Kli	Klingenberg	50.8929	13.5225	CRO	July – 2012	2009 – 2013
DE-Lkb	Lackenberg	49.0996	13.3047	ENF	July – 2012	2009 – 2013
DE-Obe	Oberbärenburg	50.7836	13.7196	ENF	July – 2012	2009 – 2013
DE-Tha	Tharandt	50.9636	13.5669	ENF	July – 2012	2009 – 2013
DK-NuF	Nuuk Fen	64.1308	-51.3861	GRA	July – 2012	2009 – 2013
DK-Sor	Soroe	55.4859	11.6446	DBF	July – 2012	2009 – 2013
ES-LJu	Llano de los Juanes	36.9266	-2.7521	OSH	July – 2012	2009 – 2013
FI-Hyy	Hyytiala	61.8475	24.295	ENF	July – 2012	2009 – 2013
FI-Sod	Sodankyla	67.3619	26.6378	ENF	July – 2012	2009 – 2013
FR-Fon	Fontainebleau-Barbeau	48.4764	2.7801	DBF	July – 2012	2009 – 2013
FR-Gri	Grignon	48.8442	1.9519	CRO	July – 2012	2009 – 2013
IT-BCi	Borgo Cioffi	40.5238	14.9574	CRO	July – 2012	2009 – 2013
IT-Col	Collelongo- Selva Piana	41.8494	13.5881	DBF	July – 2012	2009 – 2013
IT-Lav	Lavarone	45.9562	11.2813	ENF	July – 2012	2009 – 2013

Table S2: Selected plant functional type specific parameters: z_{top} and z_{bot} are respectively canopy height at top and bottom of the canopy, R_{z0m} and R_d are the ratios of momentum roughness length and displacement height to canopy top height, respectively, ψ_c and ψ_o are the soil water potential when stomata are fully closed or fully open respectively

CLM PFT	z_{top} **(m)**	z_{bot} **(m)**	R_{z0m}	R_d	ψ_c **(mm)**	ψ_o **(mm)**
Needleleaf evergreen tree – temperate	17	8.5	0.055	0.67	–255000	–66000
Needleleaf evergreen tree - boreal	17	8.5	0.055	0.67	–255000	–66000
Needleleaf deciduous tree – boreal	14	7	0.055	0.67	–255000	–66000
Broadleaf evergreen tree – tropical	35	1	0.075	0.67	–255000	–66000
Broadleaf evergreen tree – temperate	35	1	0.075	0.67	–224000	–66000
Broadleaf deciduous tree – tropical	18	10	0.055	0.67	–224000	–35000
Broadleaf deciduous tree – temperate	20	11.5	0.055	0.67	–224000	–35000
Broadleaf deciduous tree – boreal	20	11.5	0.055	0.67	–428000	–35000
Broadleaf evergreen shrub - temperate	0.5	0.1	0.12	0.68	–428000	–83000
Broadleaf deciduous shrub – temperate	0.5	0.1	0.12	0.68	–428000	–83000
Broadleaf deciduous shrub – boreal	0.5	0.1	0.12	0.68	–428000	–83000
C3 arctic grass	0.5	0.01	0.12	0.68	–275000	–74000
C3 grass	0.5	0.01	0.12	0.68	–275000	–74000
C4 grass	0.5	0.01	0.12	0.68	–275000	–74000
C3 Unmanaged Rainfed Crop	0.5	0.01	0.12	0.68	–275000	–74000
C3 Unmanaged Irrigated Crop	0.5	0.01	0.12	0.68	–275000	–74000
Rainfed Corn	-	-	0.12	0.68	–275000	–74000
Irrigated Corn	-	-	0.12	0.68	–275000	–74000
Rainfed Temperate Cereals	-	-	0.12	0.68	–275000	–74000
Irrigated Temperate Cereals	-	-	0.12	0.68	–275000	–74000
Rainfed Winter Cereals	-	-	0.12	0.68	–275000	–74000
Irrigated Winter Cereals	-	-	0.12	0.68	–275000	–74000
Rainfed Soybean	-	-	0.12	0.68	–275000	–74000
Irrigated Soybean	-	-	0.12	0.68	–275000	–74000

Table S3 Cont.

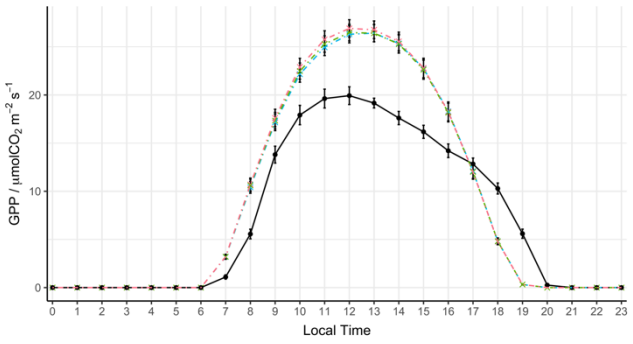
Site ID	Site Name	Site Latitude	Site Longitude	IGBP-DIS PFT Code	Simulation Period	
					Diurnal Analysis (M– yyyy)	Seasonal Analysis (yyyy– yyyy)
IT-MBo	Monte Bondone	46.0147	11.0458	GRA	July – 2012	2009 – 2013
IT-Ren	Renon	46.5869	11.4337	ENF	July – 2012	2009 – 2013
IT-Tor	Torgnon	45.8444	7.5781	GRA	July – 2012	2009 – 2013
NL-Loo	Loobos	52.1666	5.7436	ENF	July – 2012	2009 – 2013
RU-Fyo	Fyodorovskoye	56.4615	32.9221	ENF	July – 2012	2009 – 2013
RU-Sam	Samoylov	72.3733	126.4978	GRA	July – 2012	2009 – 2013
US-Me2	Metolius mature ponderosa pine	44.4523	-121.5574	ENF	July – 2012	2009 – 2013
US-MMS	Morgan Monroe State Forest	39.3232	-86.4131	DBF	July – 2012	2009 – 2013
US-Ne1	Mead - irrigated continuous maize site	41.1651	-96.4766	CRO	July – 2012	2009 – 2013
US-Ne2	Mead - irrigated maize-soybean rotation site	41.1649	-96.4701	CRO	July – 2012	2009 – 2013
US-Ne3	Mead - rainfed maize-soybean rotation site	41.1797	-96.4397	CRO	July – 2012	2009 – 2013
US-NR1	Niwot Ridge Forest (LTER NWT1)	40.0329	-105.5464	ENF	July – 2012	2009 – 2013
US-Oho	Oak Openings	41.5545	-83.8438	DBF	July – 2012	2009 – 2013
US-SRG	Santa Rita Grassland	31.7894	-110.8277	GRA	July – 2012	2009 – 2013
US-SRM	Santa Rita Mesquite	31.8214	-110.8661	GRA	July – 2012	2009 – 2013
US-Twt	Twitchell Island	38.1087	-121.653	CRO	July – 2012	2009 – 2013
US-UMB	Univ. of Mich. Biological Station	45.5598	-84.7138	DBF	July – 2012	2009 – 2013

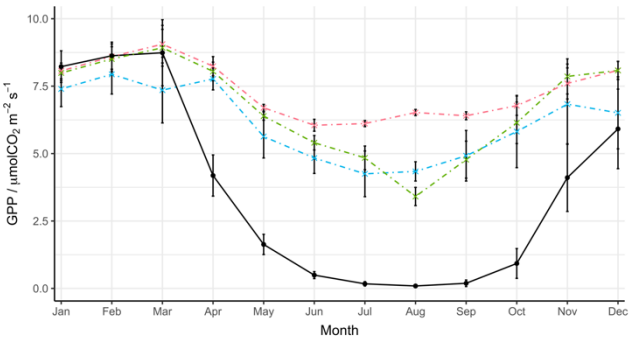
Table S4: Average normalized mean bias (*N*) of monthly gross primary productivity (GPP) from comparison between FLUXNET GPP and TEMIR-simulated GPP using FLUXNET local meteorology of sites per plant functional type (PFT) described in Table S1.

CLM PFT	**Average Normalized Mean Bias**	**Standard Deviation**
Bare land	*Not classified*	*Not classified*
Needleleaf evergreen tree – temperate	0.1084	0.2686
Needleleaf evergreen tree - boreal	0.0897	0.19
Needleleaf deciduous tree – boreal	*Not classified*	*Not classified*
Broadleaf evergreen tree – tropical	–0.0332	0.047
Broadleaf evergreen tree – temperate	–0.2146	0.3035
Broadleaf deciduous tree – tropical	0	0
Broadleaf deciduous tree – temperate	–0.0737	0.2175
Broadleaf deciduous tree – boreal	–0.0209	0.0579
Broadleaf evergreen shrub - temperate	*Not classified*	*Not classified*
Broadleaf deciduous shrub – temperate	2.5864	1.4176
Broadleaf deciduous shrub – boreal	-	-
C3 arctic grass	0.1562	0.4838
C3 grass	0.2485	0.5679
C4 grass	0.6683	1.0709
C3 Unmanaged Rainfed Crop	–0.3267	0.2816
C3 Unmanaged Irrigated Crop	0.0367	0.1933
Rainfed Corn	-	-
Irrigated Corn	-	-
Rainfed Temperate Cereals	-	-
Irrigated Temperate Cereals	-	-
Rainfed Winter Cereals	-	-
Irrigated Winter Cereals	-	-
Rainfed Soybean	-	-

Table S5: MERRA-2 surface meteorological variables ("A1 fields") used for gridded simulations of TEMIR.

Field	**Standard name**	**Unit**
PARDR	Incident direct beam photosynthetically active radiation	W m^{-2}
PARDF	Incident diffuse photosynthetically active radiation	W m^{-2}
SWGDN	Incoming shortwave radiation	W m^{-2}
HFLUX	Sensible heat flux	W m^{-2}
EFLUX	Latent heat flux	W m^{-2}
EVAP	Evapotranspiration flux	kg m^{-2} s^{-1}
USTAR	Characteristic velocity scale or friction velocity	m s^{-1}
Z0M	Surface roughness for momentum	m
SLP	Sea-level pressure	Pa
T2M	Atmospheric temperature at 2 m above displacement height	K
T10M	Atmospheric temperature at 10 m above displacement height	K
QV2M	Specific humidity at 2 m above displacement height	kg kg^{-1}
U10M	Eastward wind speed at 10 m above displacement height	m s^{-1}
V10M	Northward wind speed at 10 m above displacement height	m s^{-1}
PRECTOT	Total precipitation	kg m^{-2} s^{-1}
PRECSNO	Snowfall	kg m^{-2} s^{-1}
SNODP	Snow depth	m
GWETROOT	Soil wetness for root zone	0 – 1
GWETTOP	Soil wetness for top soil	0 – 1
CLDTOT	Cloud fraction	0 – 1





Site : AU-DaP
PFT of Site : GRA
Time Period : January of 2012

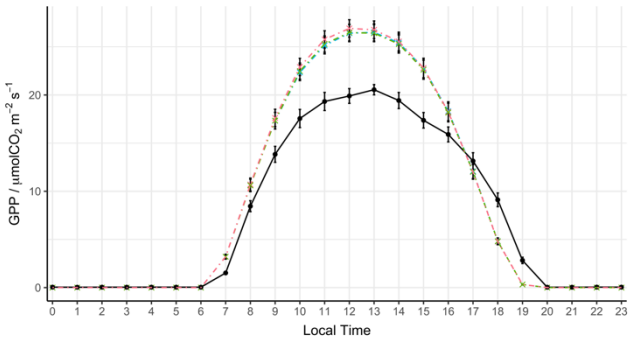
GPP Output
GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

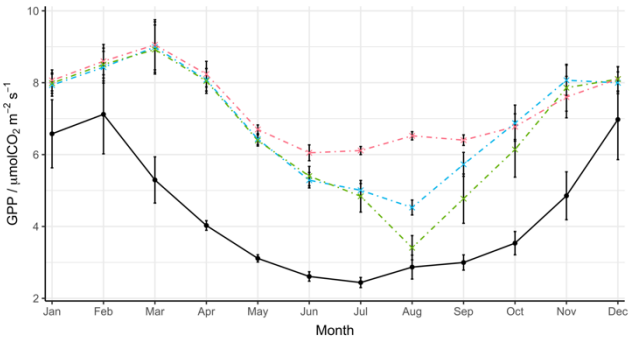
	R^2 / %	B / %	N
TEMIR_FLUX	93.9	23.1	0.643
TEMIR_MO_on	93.8	25	0.622
TEMIR_MO_off	93.9	23.5	0.637

Site : AU-DaP
PFT of Site : GRA
Year Range : 2009 – 2013

GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

	R^2 / %	B / %	N
TEMIR_FLUX	78.9	69.9	0.00558
TEMIR_MO_on	89	104	-0.248
TEMIR_MO_off	80.2	85.6	-0.0409





Site : AU-DaS
PFT of Site : GRA
Time Period : January of 2012

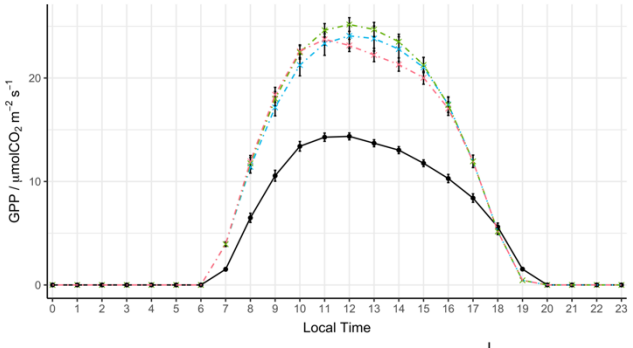
GPP Output
GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

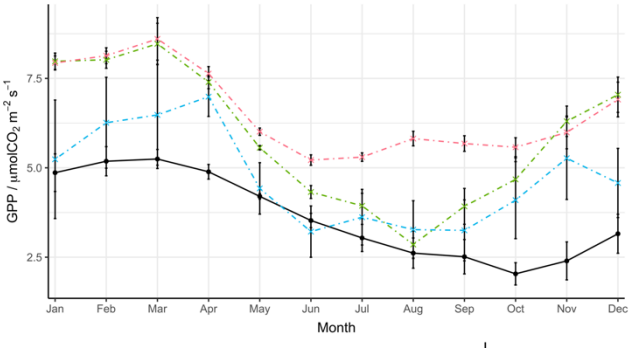
	R^2 / %	B / %	N
TEMIR_FLUX	97.1	20	0.715
TEMIR_MO_on	96.9	21.3	0.702
TEMIR_MO_off	97	19.9	0.716

Site : AU-DaS
PFT of Site : GRA
Year Range : 2009 – 2013

GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

	R^2 / %	B / %	N
TEMIR_FLUX	66.5	59	-0.722
TEMIR_MO_on	70.8	68.3	-0.993
TEMIR_MO_off	66	53.4	-0.557





Site : AU-Dry
PFT of Site : GRA
Time Period : January of 2012

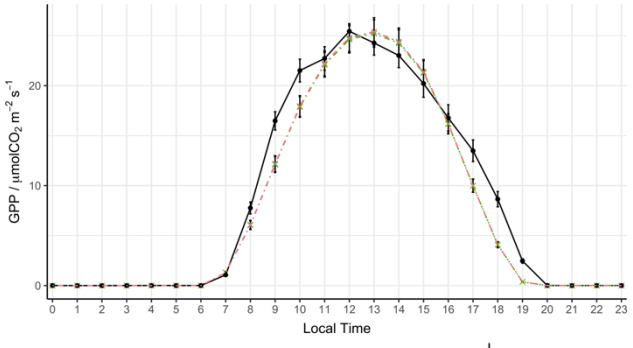
GPP Output
GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

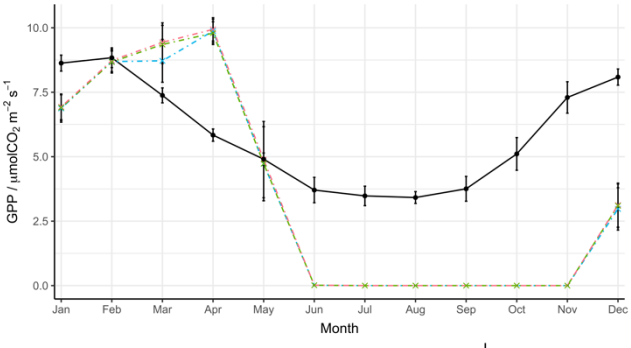
	R^2 / %	B / %	N
TEMIR_FLUX	98.5	63.1	0.366
TEMIR_MO_on	98.7	61.6	0.381
TEMIR_MO_off	98.5	68.4	0.315

Site : AU-Dry
PFT of Site : GRA
Year Range : 2009 – 2013

GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

	R^2 / %	B / %	N
TEMIR_FLUX	55.4	29.8	-0.102
TEMIR_MO_on	70.3	80.5	-1.84
TEMIR_MO_off	59.8	61.4	-1.17





Site : AU-How
PFT of Site : GRA
Time Period : January of 2012

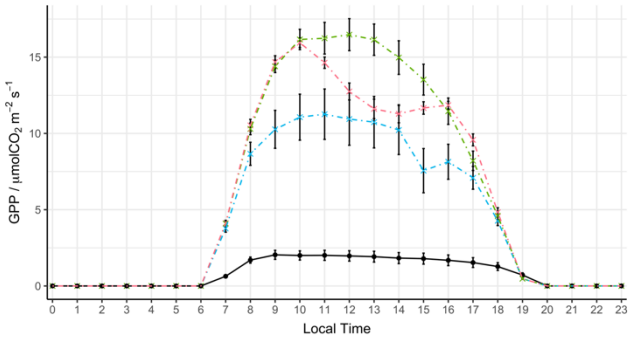
GPP Output
GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

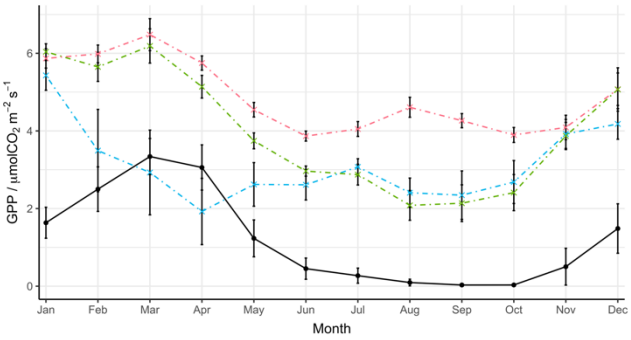
	R^2 / %	B / %	N
TEMIR_FLUX	97.2	-8.79	0.881
TEMIR_MO_on	97.2	-8.56	0.882
TEMIR_MO_off	97.3	-9.04	0.882

Site : AU-How
PFT of Site : GRA
Year Range : 2009 – 2013

GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

	R^2 / %	B / %	N
TEMIR_FLUX	40.8	-40.6	-0.807
TEMIR_MO_on	40.7	-38.9	-0.824
TEMIR_MO_off	41.1	-39.6	-0.826





Site : AU-Stp
PFT of Site : GRA
Time Period : January of 2012

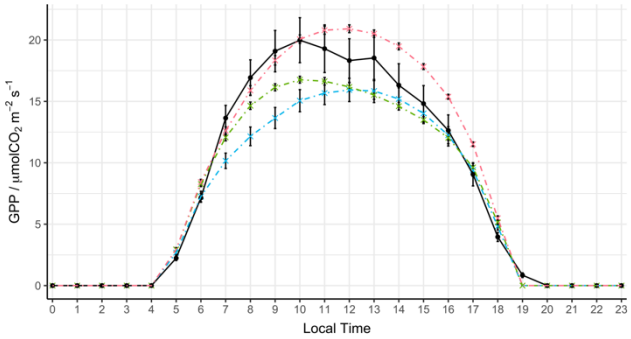
GPP Output
GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

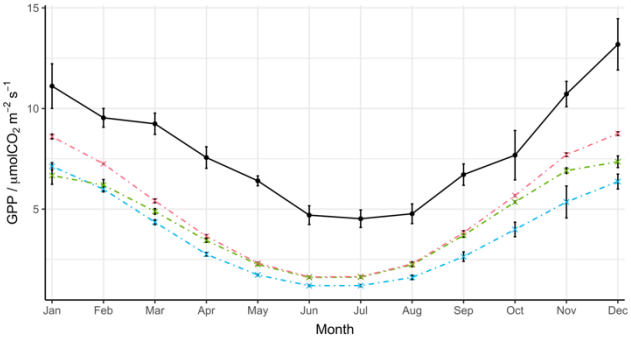
	R^2 / %	B / %	N
TEMIR_FLUX	95.7	395	-3.16
TEMIR_MO_on	95.1	535	-4.63
TEMIR_MO_off	93.4	597	-5.28

Site : AU-Stp
PFT of Site : GRA
Year Range : 2009 – 2013

GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

	R^2 / %	B / %	N
TEMIR_FLUX	0.881	157	-1.2
TEMIR_MO_on	84	300	-2.69
TEMIR_MO_off	79.7	229	-1.83





Site : AU-Tum
PFT of Site : EBF
Time Period : January of 2012

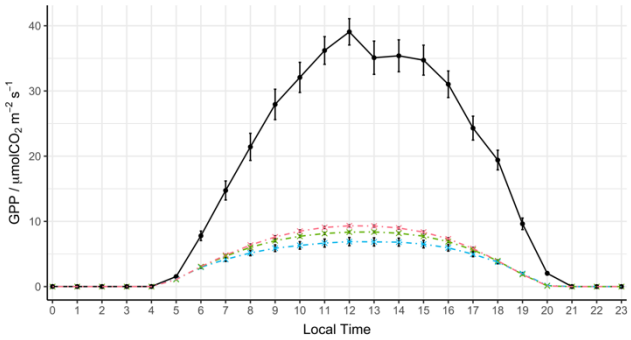
GPP Output
GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

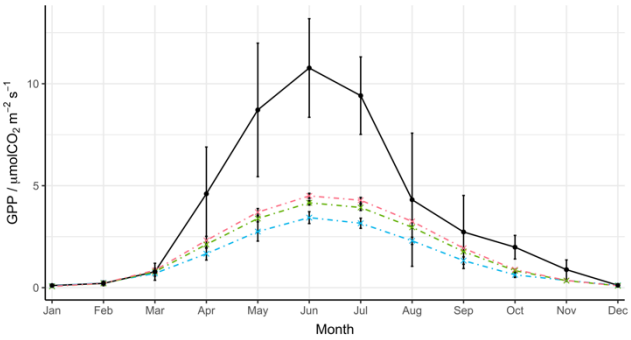
	R^2 / %	B / %	N
TEMIR_FLUX	97.2	-14.9	0.821
TEMIR_MO_on	98.1	9.01	0.863
TEMIR_MO_off	98.9	-9.72	0.857

Site : AU-Tum
PFT of Site : EBF
Year Range : 2009 – 2013

GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

	R^2 / %	B / %	N
TEMIR_FLUX	89	-53.9	-0.888
TEMIR_MO_on	92.3	-38.9	-0.362
TEMIR_MO_off	90.8	-45.7	-0.6





Site : BE-Lon
PFT of Site : CRO
Time Period : July of 2012

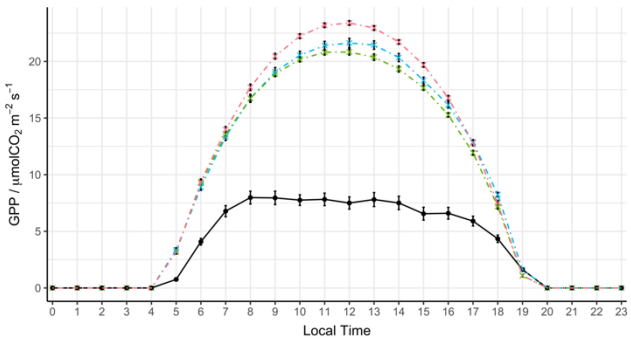
GPP Output
GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

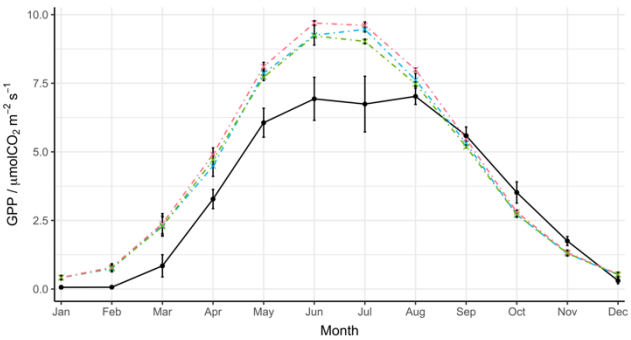
	R^2 / %	B / %	N
TEMIR_FLUX	97	-79.5	0.108
TEMIR_MO_on	98.1	-74.3	0.166
TEMIR_MO_off	97.8	-76.2	0.145

Site : BE-Lon
PFT of Site : CRO
Year Range : 2009 – 2013

GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

	R^2 / %	B / %	N
TEMIR_FLUX	95.1	-62.4	0.274
TEMIR_MO_on	93.4	-49.7	0.419
TEMIR_MO_off	93.7	-53.7	0.376





Site : CA-TP1
PFT of Site : ENF
Time Period : July of 2012

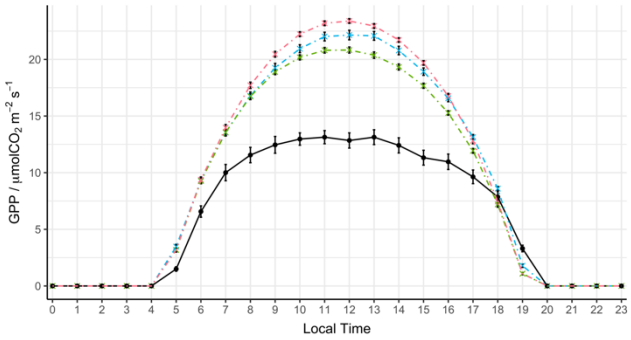
GPP Output
GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

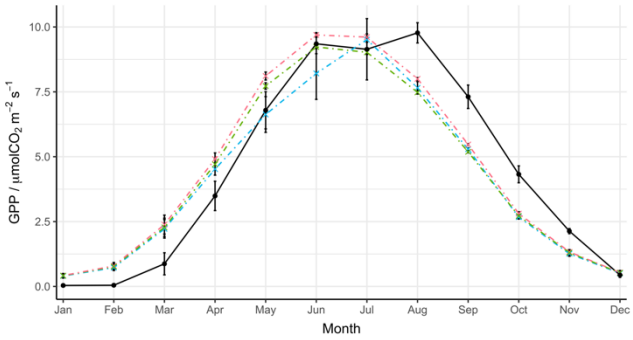
	R^2 / %	B / %	N
TEMIR_FLUX	96.5	146	-0.692
TEMIR_MO_on	95.4	160	-0.859
TEMIR_MO_off	96.6	138	-0.608

Site : CA-TP1
PFT of Site : ENF
Year Range : 2009 – 2013

GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

	R^2 / %	B / %	N
TEMIR_FLUX	91.8	23.3	0.564
TEMIR_MO_on	91.8	28.2	0.513
TEMIR_MO_off	91.8	21.8	0.578





Site : CA-TP3
PFT of Site : ENF
Time Period : July of 2012

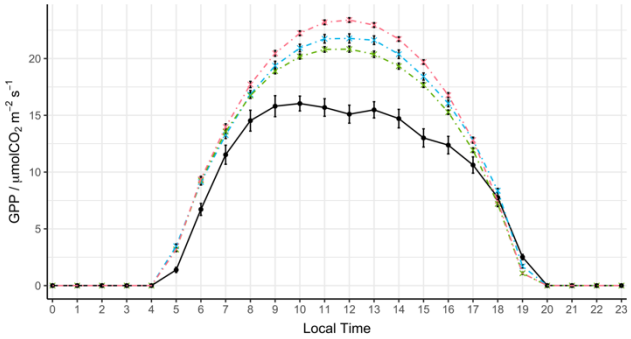
GPP Output
- GPP_DT_VUT_MEAN
- TEMIR_FLUX
- TEMIR_MO_off
- TEMIR_MO_on

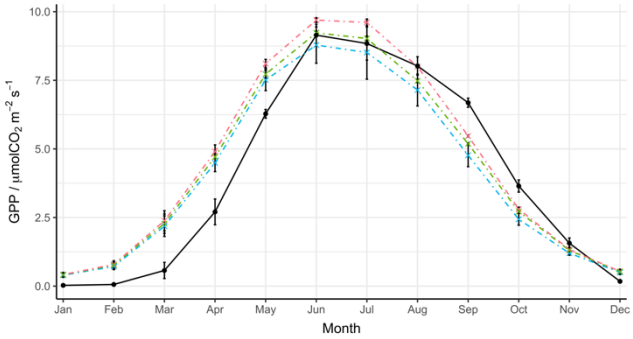
	R^2 / %	B / %	N
TEMIR_FLUX	97.5	53.2	0.352
TEMIR_MO_on	96.4	57.7	0.282
TEMIR_MO_off	97.2	44.5	0.433

Site : CA-TP3
PFT of Site : ENF
Year Range : 2009 – 2013

- GPP_DT_VUT_MEAN
- TEMIR_FLUX
- TEMIR_MO_off
- TEMIR_MO_on

	R^2 / %	B / %	N
TEMIR_FLUX	91.4	-7.63	0.704
TEMIR_MO_on	89.8	0.671	0.694
TEMIR_MO_off	89.5	-4.37	0.704





Site : CA-TP4
PFT of Site : ENF
Time Period : July of 2012

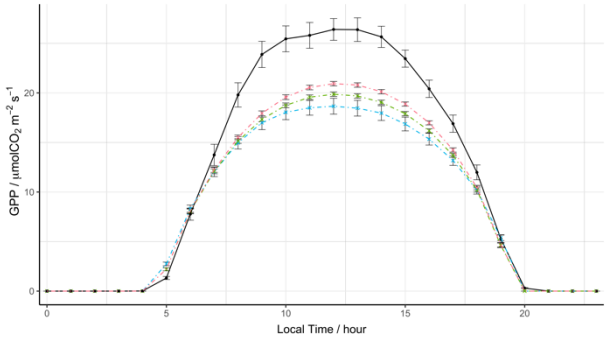
GPP Output
- GPP_DT_VUT_MEAN
- TEMIR_FLUX
- TEMIR_MO_off
- TEMIR_MO_on

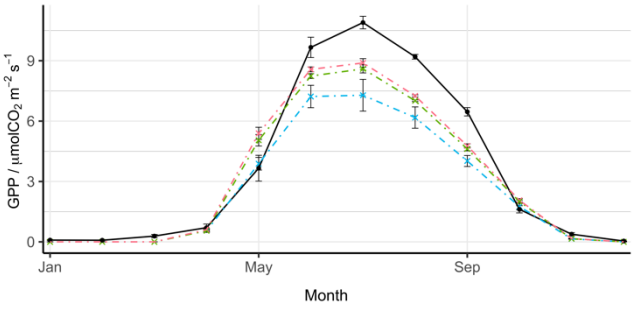
	R^2 / %	B / %	N
TEMIR_FLUX	98.4	30.3	0.643
TEMIR_MO_on	97.8	36.2	0.564
TEMIR_MO_off	98.5	24.8	0.69

Site : CA-TP4
PFT of Site : ENF
Year Range : 2009 – 2013

- GPP_DT_VUT_MEAN
- TEMIR_FLUX
- TEMIR_MO_off
- TEMIR_MO_on

	R^2 / %	B / %	N
TEMIR_FLUX	90.4	1.94	0.711
TEMIR_MO_on	91.8	13.3	0.713
TEMIR_MO_off	91.6	7.6	0.736





Site : CH-Cha
PFT of Site : GRA
Time Period : July of 2012

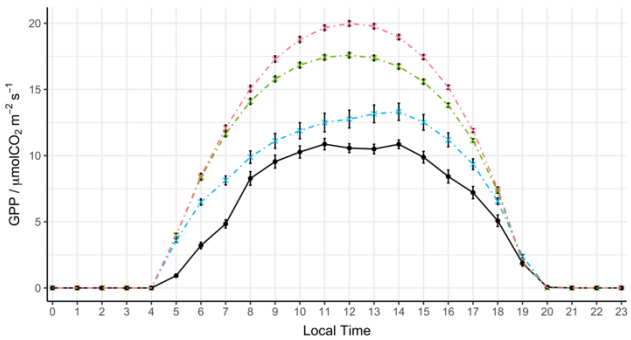
GPP Output
- GPP_DT_VUT_MEAN
- TEMIR_FLUX
- TEMIR_MO_off
- TEMIR_MO_on

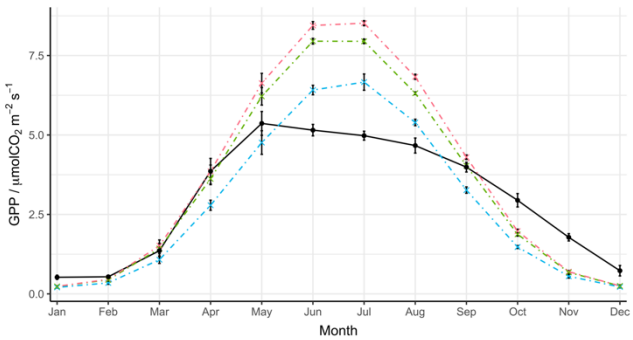
	R^2 / %	B / %	N
TEMIR_FLUX	97.3	-12	0.812
TEMIR_MO_on	97.5	-9.13	0.834
TEMIR_MO_off	96.9	-14	0.792

Site : CH-Cha
PFT of Site : GRA
Year Range : 2009 – 2013

- GPP_DT_VUT_MEAN
- TEMIR_FLUX
- TEMIR_MO_off
- TEMIR_MO_on

	R^2 / %	B / %	N
TEMIR_FLUX	93.8	-29.2	0.417
TEMIR_MO_on	93.6	-26.8	0.429
TEMIR_MO_off	93.5	-30.9	0.382





Site : CH-Dav
PFT of Site : ENF
Time Period : July of 2012

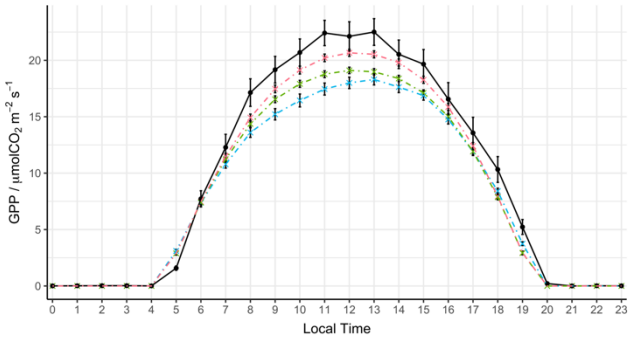
GPP Output
- GPP_DT_VUT_MEAN
- TEMIR_FLUX
- TEMIR_MO_off
- TEMIR_MO_on

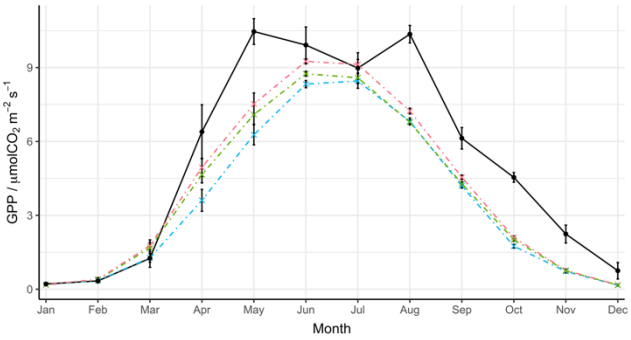
	R^2 / %	B / %	N
TEMIR_FLUX	97.5	28.8	0.676
TEMIR_MO_on	98.1	85.1	0.0451
TEMIR_MO_off	97.5	68.7	0.228

Site : CH-Dav
PFT of Site : ENF
Year Range : 2009 – 2013

- GPP_DT_VUT_MEAN
- TEMIR_FLUX
- TEMIR_MO_off
- TEMIR_MO_on

	R^2 / %	B / %	N
TEMIR_FLUX	87.3	-7.59	0.5
TEMIR_MO_on	89.1	21.8	0.323
TEMIR_MO_off	89.2	14.2	0.421





Site : CH-Fru
PFT of Site : GRA
Time Period : July of 2012

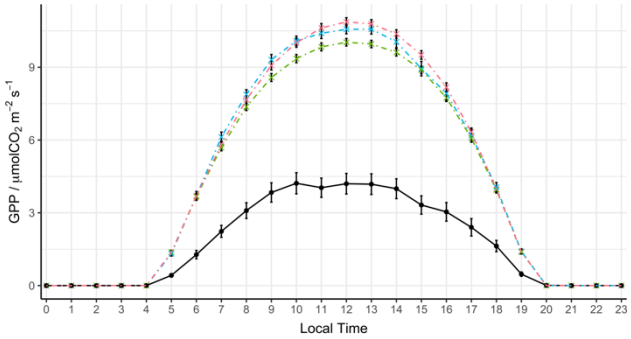
GPP Output
GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

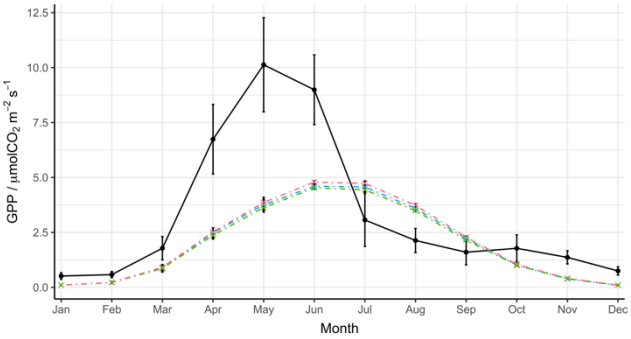
	R^2 / %	B / %	N
TEMIR_FLUX	99.3	-16.5	0.796
TEMIR_MO_on	99.4	-8.57	0.889
TEMIR_MO_off	99.4	-13.6	0.832

Site : CH-Fru
PFT of Site : GRA
Year Range : 2009 – 2013

GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

	R^2 / %	B / %	N
TEMIR_FLUX	90.2	-31.6	0.545
TEMIR_MO_on	91.8	-22	0.65
TEMIR_MO_off	91.8	-26.4	0.599





Site : CH-Oe2
PFT of Site : CRO
Time Period : July of 2012

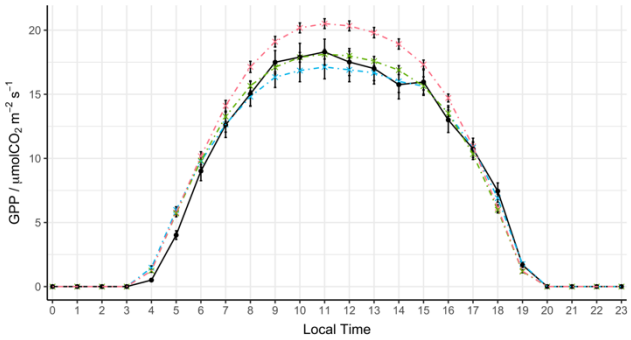
GPP Output
GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

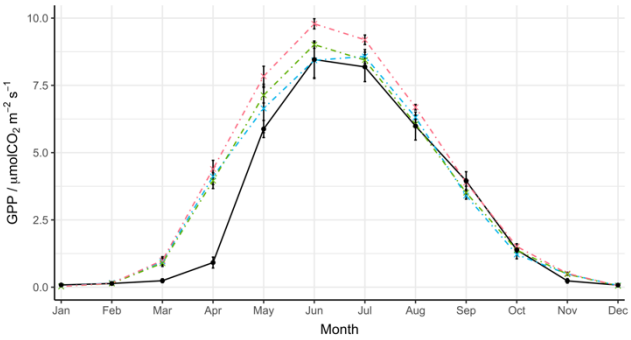
	R^2 / %	B / %	N
TEMIR_FLUX	99.7	156	-0.729
TEMIR_MO_on	99.4	159	-0.759
TEMIR_MO_off	99.3	144	-0.598

Site : CH-Oe2
PFT of Site : CRO
Year Range : 2009 – 2013

GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

	R^2 / %	B / %	N
TEMIR_FLUX	50.9	-39.4	0.29
TEMIR_MO_on	50.6	-37.3	0.294
TEMIR_MO_off	50.8	-40.9	0.291





Site : CZ-wet
PFT of Site : GRA
Time Period : July of 2012

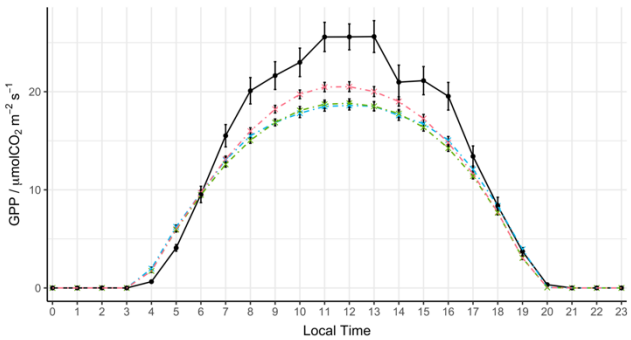
GPP Output
GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

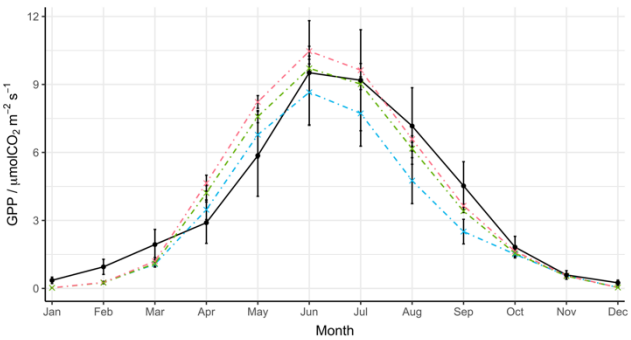
	R^2 / %	B / %	N
TEMIR_FLUX	99.3	-0.403	0.939
TEMIR_MO_on	99.3	12.2	0.837
TEMIR_MO_off	99.3	2.02	0.937

Site : CZ-wet
PFT of Site : GRA
Year Range : 2009 – 2013

GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

	R^2 / %	B / %	N
TEMIR_FLUX	92	13.7	0.817
TEMIR_MO_on	92.6	26.7	0.723
TEMIR_MO_off	92.9	15.6	0.813





Site : DE-Akm
PFT of Site : GRA
Time Period : July of 2012

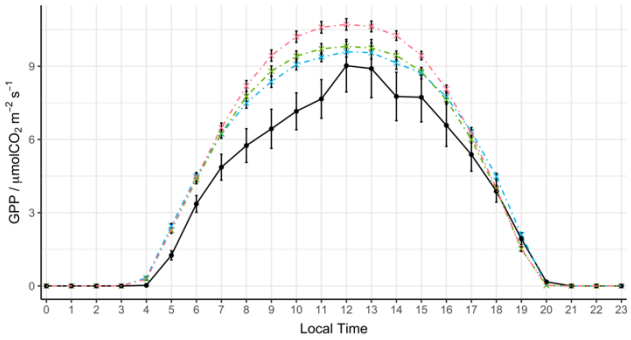
GPP Output
GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

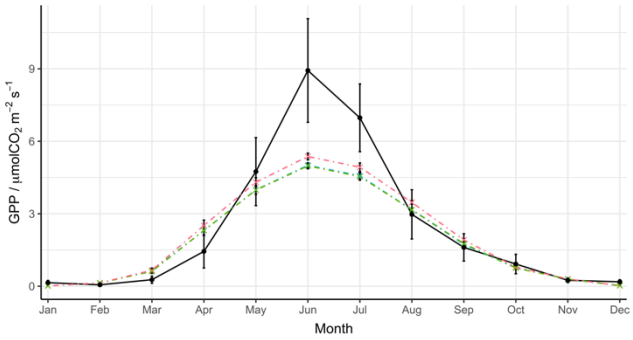
	R^2 / %	B / %	N
TEMIR_FLUX	98.1	-18.7	0.753
TEMIR_MO_on	98.9	-15.4	0.797
TEMIR_MO_off	98.5	-20.3	0.743

Site : DE-Akm
PFT of Site : GRA
Year Range : 2009 – 2013

GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

	R^2 / %	B / %	N
TEMIR_FLUX	92	-17.1	0.694
TEMIR_MO_on	94	4.16	0.739
TEMIR_MO_off	94.5	-3.23	0.774





Site : DE-Geb
PFT of Site : CRO
Time Period : July of 2012

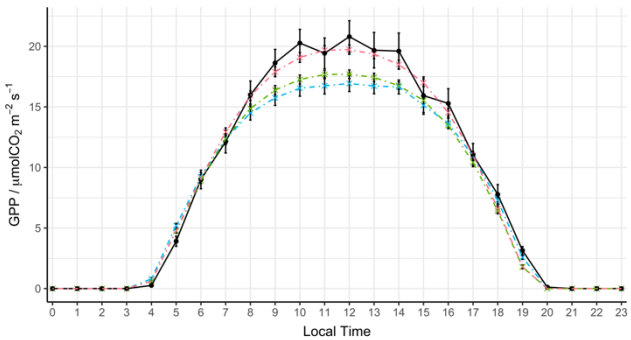
GPP Output
GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

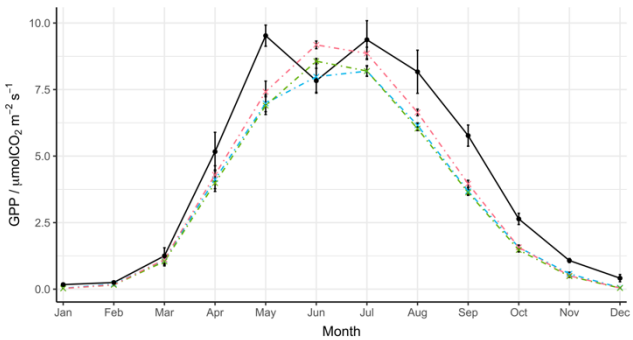
	R^2 / %	B / %	N
TEMIR_FLUX	98.6	20.1	0.759
TEMIR_MO_on	98.1	28.4	0.65
TEMIR_MO_off	98.1	20.3	0.744

Site : DE-Geb
PFT of Site : CRO
Year Range : 2009 – 2013

GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

	R^2 / %	B / %	N
TEMIR_FLUX	89.9	-20.5	0.674
TEMIR_MO_on	89.3	-14.2	0.686
TEMIR_MO_off	89.6	-20.8	0.671





Site : DE-Gri
PFT of Site : GRA
Time Period : July of 2012

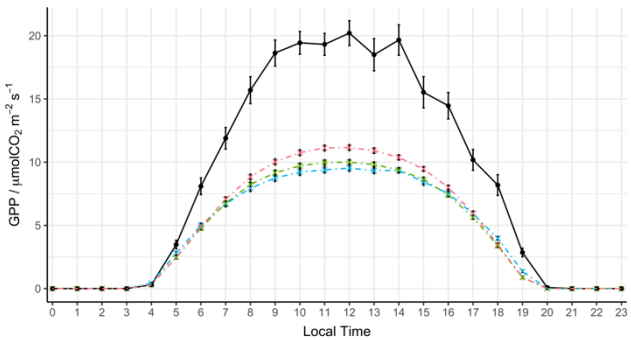
GPP Output
GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

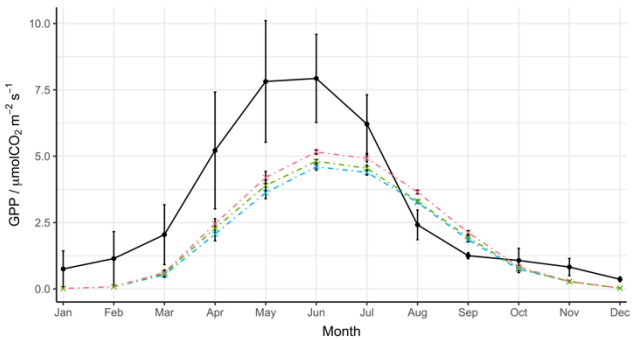
	R^2 / %	B / %	N
TEMIR_FLUX	98.8	-10.3	0.855
TEMIR_MO_on	99.4	-2.07	0.938
TEMIR_MO_off	99.2	-9.67	0.871

Site : DE-Gri
PFT of Site : GRA
Year Range : 2009 – 2013

GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

	R^2 / %	B / %	N
TEMIR_FLUX	95.6	-21.3	0.718
TEMIR_MO_on	94	-15.2	0.737
TEMIR_MO_off	93.6	-21.5	0.686





Site : DE-Kli
PFT of Site : CRO
Time Period : July of 2012

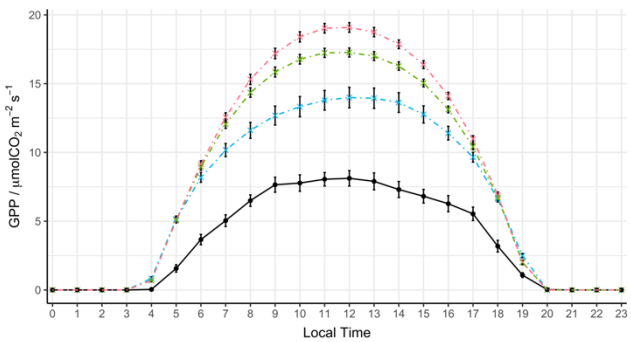
GPP Output
GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

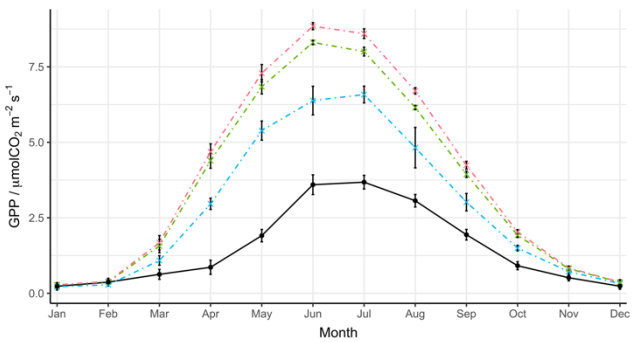
	R^2 / %	B / %	N
TEMIR_FLUX	98.8	-48.8	0.431
TEMIR_MO_on	99.2	-44	0.489
TEMIR_MO_off	99	-48.4	0.437

Site : DE-Kli
PFT of Site : CRO
Year Range : 2009 – 2013

GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

	R^2 / %	B / %	N
TEMIR_FLUX	76.9	-42.1	0.378
TEMIR_MO_on	78.1	-34.2	0.43
TEMIR_MO_off	79	-39.2	0.404





Site : DE-Lkb
PFT of Site : ENF
Time Period : July of 2012

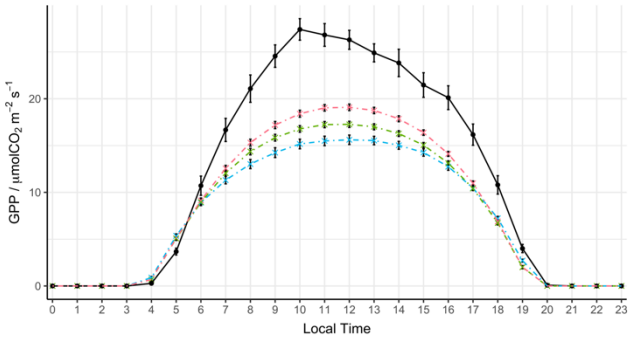
GPP Output
GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

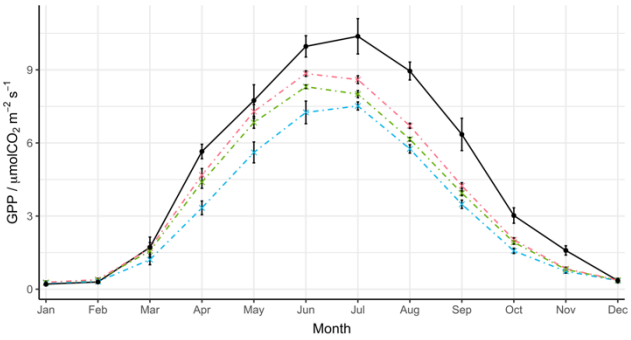
	R^2 / %	B / %	N
TEMIR_FLUX	98.5	85.3	0.0123
TEMIR_MO_on	99.3	135	-0.566
TEMIR_MO_off	99.3	118	-0.37

Site : DE-Lkb
PFT of Site : ENF
Year Range : 2009 – 2013

GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

	R^2 / %	B / %	N
TEMIR_FLUX	89.9	85.4	-0.157
TEMIR_MO_on	87.9	156	-1.09
TEMIR_MO_off	87.5	139	-0.863





Site : DE-Obe
PFT of Site : ENF
Time Period : July of 2012

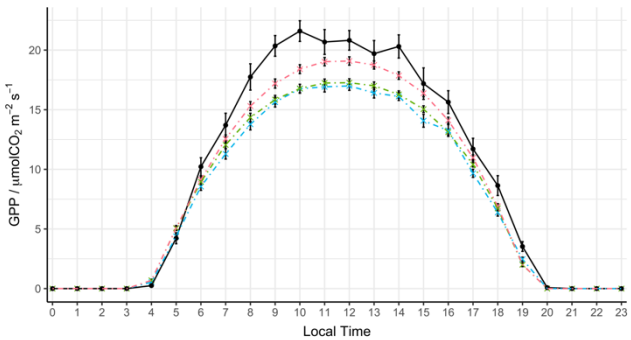
GPP Output
GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

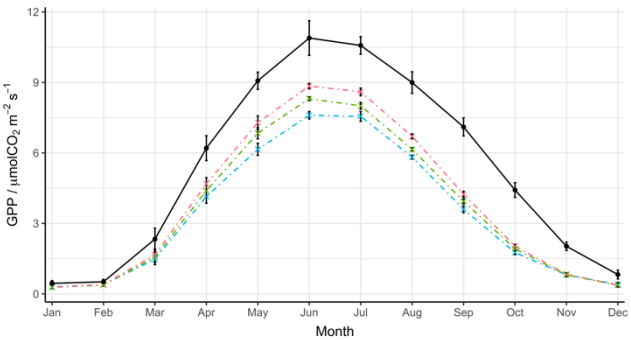
	R^2 / %	B / %	N
TEMIR_FLUX	98	-36.2	0.566
TEMIR_MO_on	99	-27	0.675
TEMIR_MO_off	98.8	-32.3	0.615

Site : DE-Obe
PFT of Site : ENF
Year Range : 2009 – 2013

GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

	R^2 / %	B / %	N
TEMIR_FLUX	97.8	-33.5	0.547
TEMIR_MO_on	97.4	-18.3	0.746
TEMIR_MO_off	97.1	-23.6	0.675





Site : DE-Tha
PFT of Site : ENF
Time Period : July of 2012

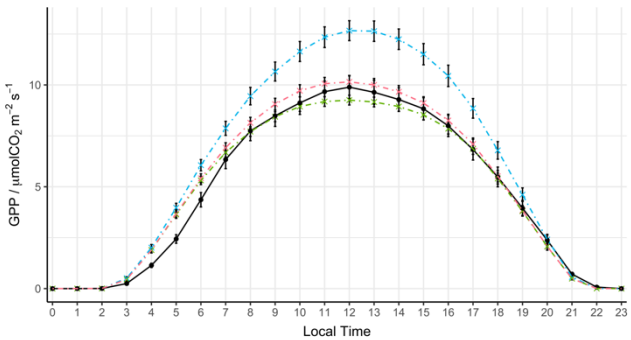
GPP Output
GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

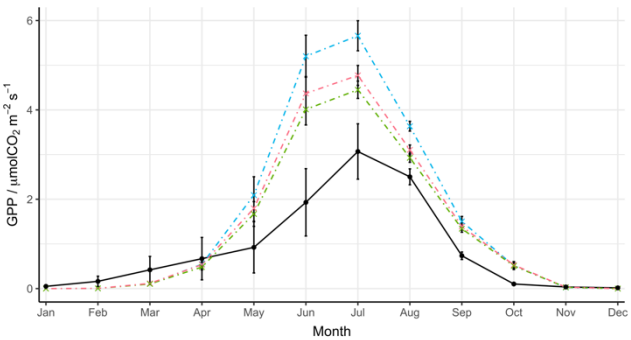
	R^2 / %	B / %	N
TEMIR_FLUX	99.7	-19.1	0.772
TEMIR_MO_on	99.4	-10.1	0.868
TEMIR_MO_off	99.3	-16.6	0.792

Site : DE-Tha
PFT of Site : ENF
Year Range : 2009 – 2013

GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

	R^2 / %	B / %	N
TEMIR_FLUX	96.8	-36.9	0.447
TEMIR_MO_on	97.1	-27.5	0.587
TEMIR_MO_off	97	-32.2	0.516





Site : DK-NuF
PFT of Site : GRA
Time Period : July of 2012

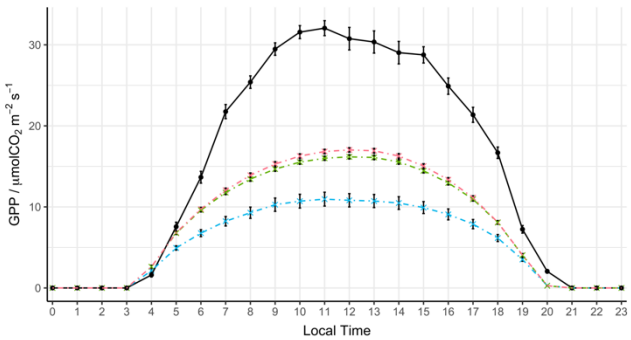
GPP Output
GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

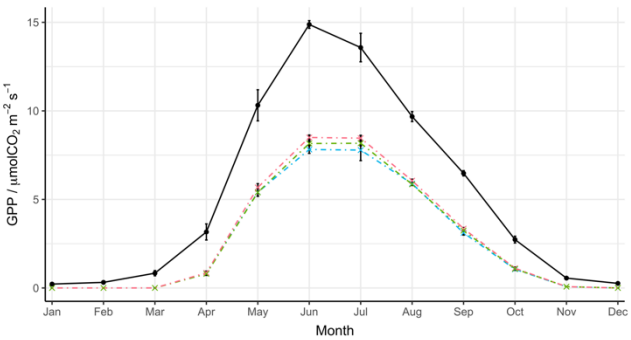
	R^2 / %	B / %	N
TEMIR_FLUX	99.5	28.5	0.606
TEMIR_MO_on	99.2	6.06	0.9
TEMIR_MO_off	98.9	0.0272	0.917

Site : DK-NuF
PFT of Site : GRA
Year Range : 2009 – 2013

GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

	R^2 / %	B / %	N
TEMIR_FLUX	89.9	81.6	-0.0247
TEMIR_MO_on	90	56.8	0.246
TEMIR_MO_off	90.5	46.2	0.347





Site : DK-Sor
PFT of Site : DBF
Time Period : July of 2012

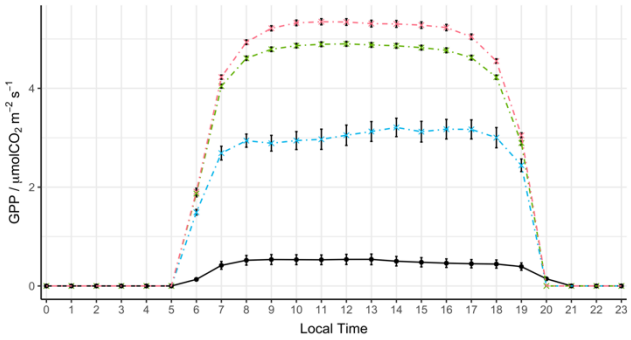
GPP Output
GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

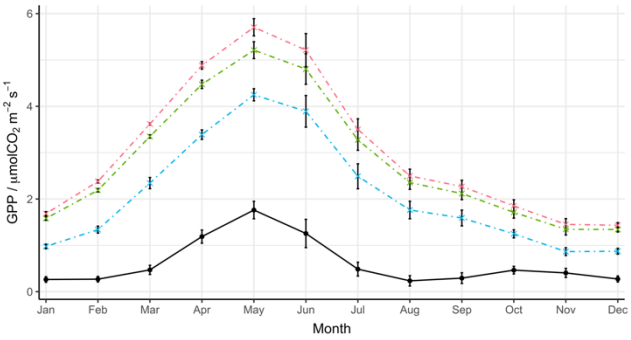
	R^2 / %	B / %	N
TEMIR_FLUX	97.7	-62.7	0.231
TEMIR_MO_on	98.3	-44.7	0.446
TEMIR_MO_off	98.1	-46.7	0.423

Site : DK-Sor
PFT of Site : DBF
Year Range : 2009 – 2013

GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

	R^2 / %	B / %	N
TEMIR_FLUX	98.8	-49.3	0.459
TEMIR_MO_on	98.9	-45.9	0.496
TEMIR_MO_off	98.8	-48	0.473





Site : ES-LJu
PFT of Site : OSH
Time Period : July of 2012

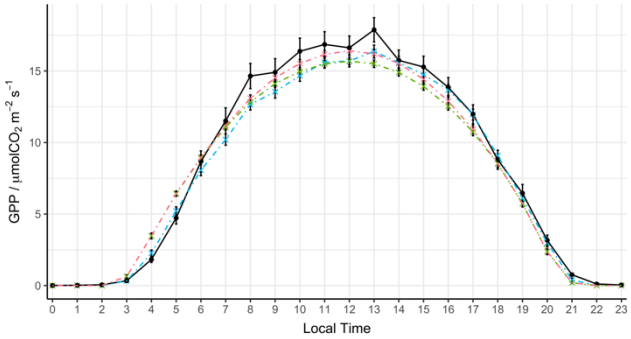
GPP Output
GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

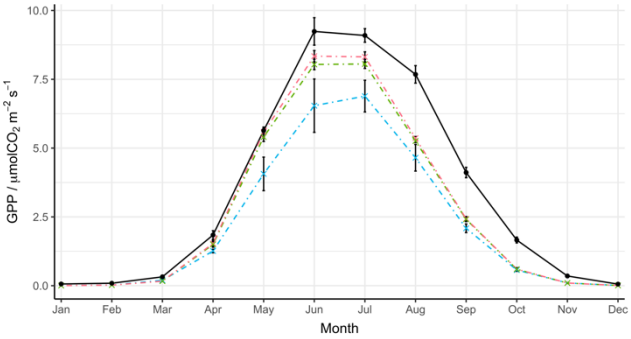
	R^2 / %	B / %	N
TEMIR_FLUX	95.8	508	-5.15
TEMIR_MO_on	97	898	-9.85
TEMIR_MO_off	97.1	822	-8.94

Site : ES-LJu
PFT of Site : OSH
Year Range : 2009 – 2013

GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

	R^2 / %	B / %	N
TEMIR_FLUX	83.7	239	-2.73
TEMIR_MO_on	81.7	395	-5.16
TEMIR_MO_off	80.7	358	-4.58





Site : FI-Hyy
PFT of Site : ENF
Time Period : July of 2012

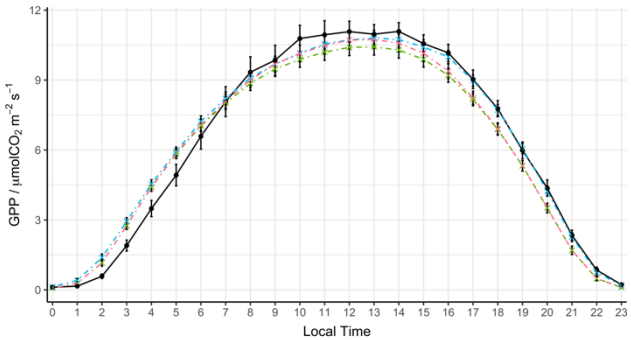
GPP Output
GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

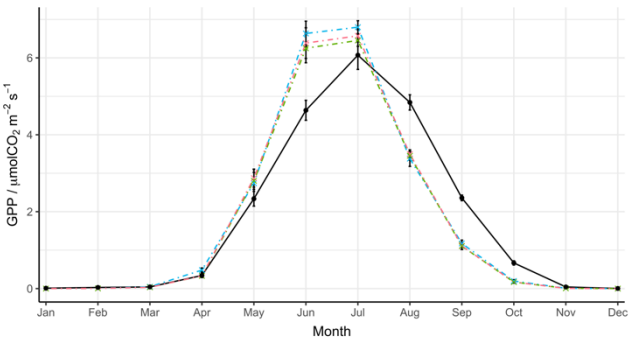
	R^2 / %	B / %	N
TEMIR_FLUX	99.4	-5.71	0.907
TEMIR_MO_on	98.9	-3.69	0.897
TEMIR_MO_off	98.8	-6.29	0.863

Site : FI-Hyy
PFT of Site : ENF
Year Range : 2009 – 2013

GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

	R^2 / %	B / %	N
TEMIR_FLUX	98	-34.2	0.639
TEMIR_MO_on	96.6	-19.1	0.798
TEMIR_MO_off	96.9	-21.4	0.775





Site : FI-Sod
PFT of Site : ENF
Time Period : July of 2012

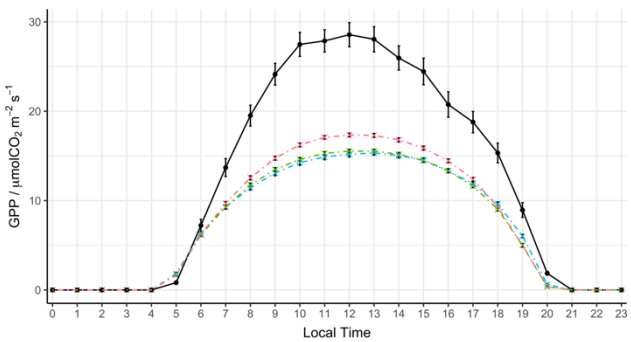
GPP Output
GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

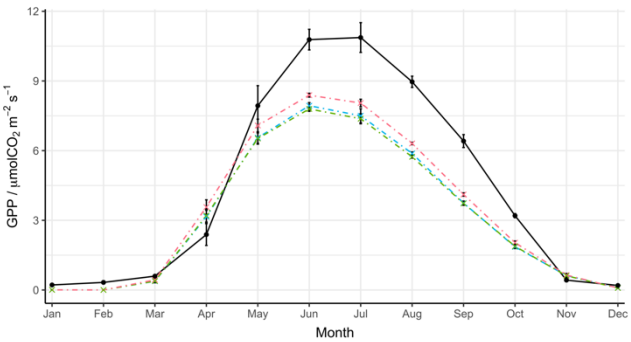
	R^2 / %	B / %	N
TEMIR_FLUX	99	1.28	0.909
TEMIR_MO_on	98.4	-2.85	0.863
TEMIR_MO_off	98.3	-4.53	0.837

Site : FI-Sod
PFT of Site : ENF
Year Range : 2009 – 2013

GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

	R^2 / %	B / %	N
TEMIR_FLUX	88.8	0.402	0.715
TEMIR_MO_on	89.9	-1.85	0.737
TEMIR_MO_off	90.1	-3.63	0.748





Site : FR-Fon
PFT of Site : DBF
Time Period : July of 2012

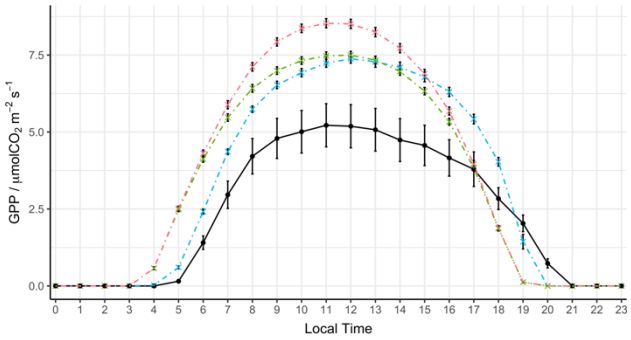
GPP Output
GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

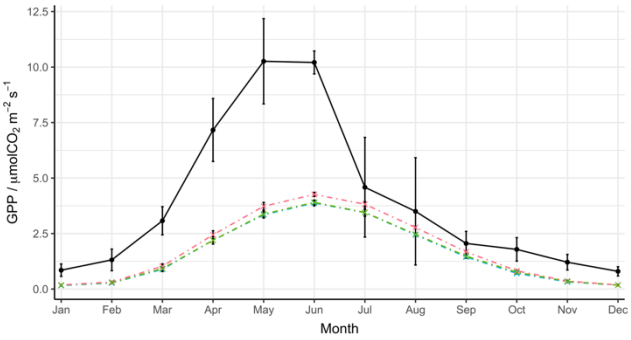
	R^2 / %	B / %	N
TEMIR_FLUX	98.2	-41.1	0.52
TEMIR_MO_on	99.1	-36.3	0.577
TEMIR_MO_off	98.7	-41.3	0.52

Site : FR-Fon
PFT of Site : DBF
Year Range : 2009 – 2013

GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

	R^2 / %	B / %	N
TEMIR_FLUX	95.9	-27.9	0.644
TEMIR_MO_on	95.6	-22.1	0.689
TEMIR_MO_off	95.6	-28.6	0.633





Site : FR-Gri
PFT of Site : CRO
Time Period : July of 2012

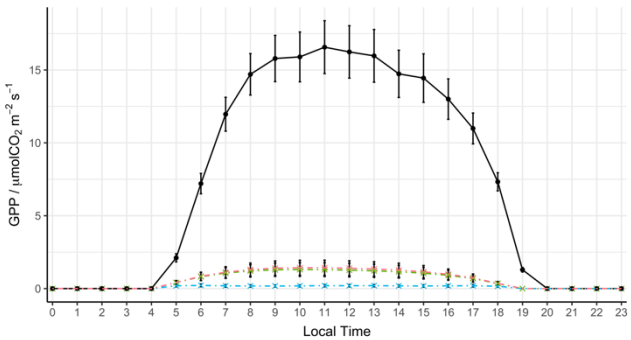
GPP Output
GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

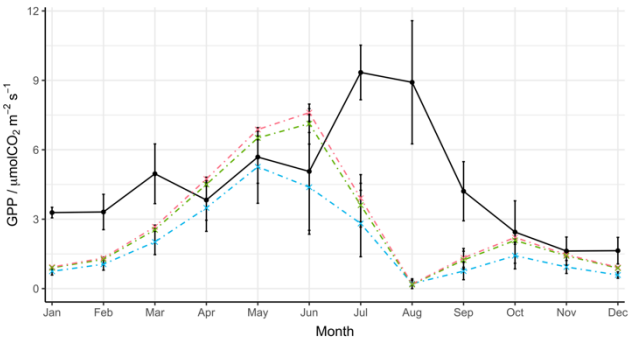
	R^2 / %	B / %	N
TEMIR_FLUX	98.2	39.9	0.474
TEMIR_MO_on	88.1	55.1	0.2
TEMIR_MO_off	88	40.9	0.367

Site : FR-Gri
PFT of Site : CRO
Year Range : 2009 – 2013

GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

	R^2 / %	B / %	N
TEMIR_FLUX	76.5	-58.8	0.172
TEMIR_MO_on	75.8	-53.9	0.241
TEMIR_MO_off	76.5	-58.2	0.18





Site : IT-BCi
PFT of Site : CRO
Time Period : July of 2012

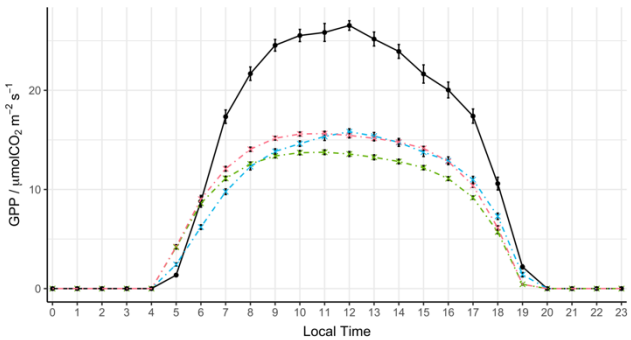
GPP Output
GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

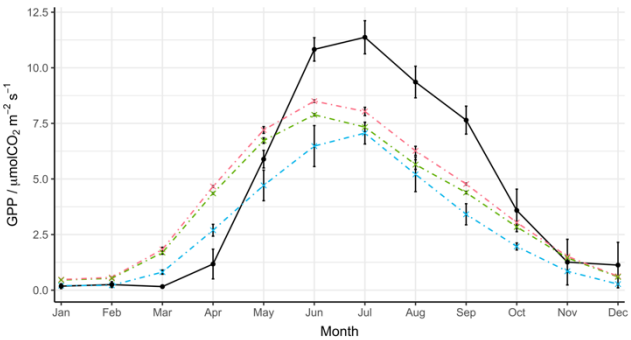
	R^2 / %	B / %	N
TEMIR_FLUX	77.3	-98.5	-0.117
TEMIR_MO_on	96.8	-91.5	-0.0371
TEMIR_MO_off	96.4	-92.1	-0.0442

Site : IT-BCi
PFT of Site : CRO
Year Range : 2009 – 2013

GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

	R^2 / %	B / %	N
TEMIR_FLUX	6.51	-56.4	-0.351
TEMIR_MO_on	4.95	-37.1	-0.297
TEMIR_MO_off	4.57	-40.6	-0.287





Site : IT-Col
PFT of Site : DBF
Time Period : July of 2012

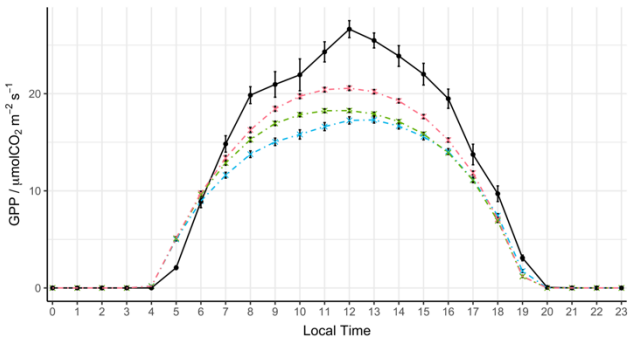
GPP Output
GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

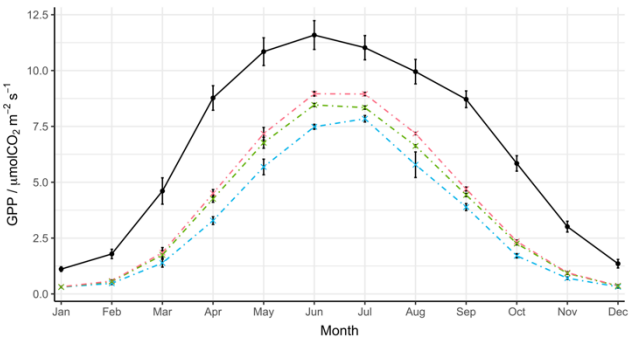
	R^2 / %	B / %	N
TEMIR_FLUX	99.2	-38.8	0.567
TEMIR_MO_on	97.5	-35.8	0.584
TEMIR_MO_off	96.5	-42.9	0.508

Site : IT-Col
PFT of Site : DBF
Year Range : 2009 – 2013

GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

	R^2 / %	B / %	N
TEMIR_FLUX	90.5	-35.9	0.494
TEMIR_MO_on	81.2	-10.1	0.566
TEMIR_MO_off	80.1	-16.9	0.534





Site : IT-Lav
PFT of Site : ENF
Time Period : July of 2012

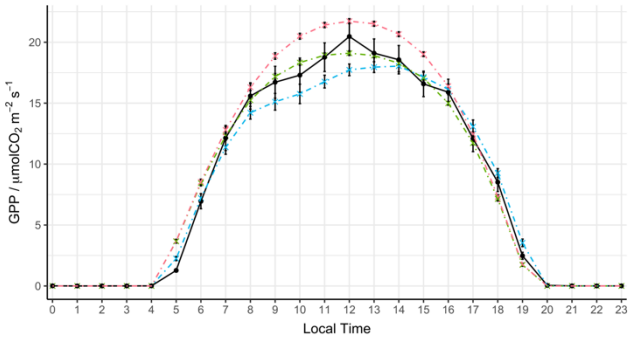
GPP Output
GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

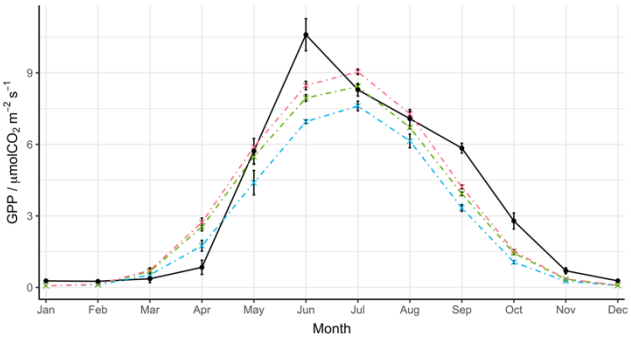
	R^2 / %	B / %	N
TEMIR_FLUX	98	-26.8	0.674
TEMIR_MO_on	98.3	-15.8	0.788
TEMIR_MO_off	97.6	-22.8	0.712

Site : IT-Lav
PFT of Site : ENF
Year Range : 2009 – 2013

GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

	R^2 / %	B / %	N
TEMIR_FLUX	90.2	-50.6	0.0793
TEMIR_MO_on	93.5	-39.1	0.288
TEMIR_MO_off	93.7	-42.7	0.222





Site : IT-MBo
PFT of Site : GRA
Time Period : July of 2012

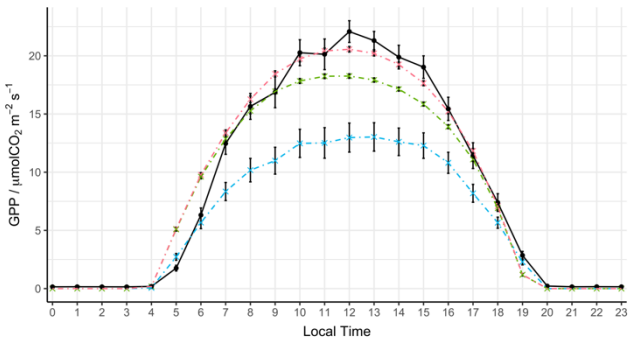
GPP Output
GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

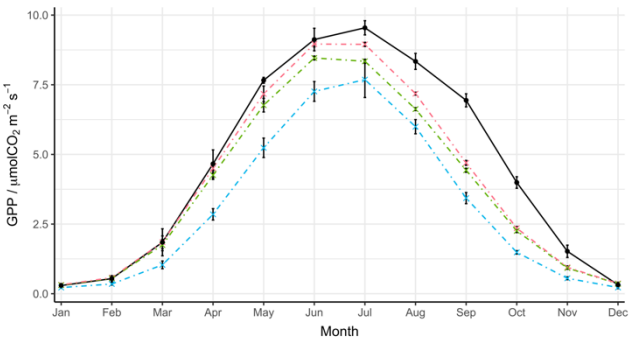
	R^2 / %	B / %	N
TEMIR_FLUX	98.9	-3.44	0.908
TEMIR_MO_on	99	10.1	0.865
TEMIR_MO_off	99	0.247	0.934

Site : IT-MBo
PFT of Site : GRA
Year Range : 2009 – 2013

GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

	R^2 / %	B / %	N
TEMIR_FLUX	92.2	-25	0.672
TEMIR_MO_on	91.7	-5.84	0.764
TEMIR_MO_off	92	-12.3	0.757





Site : IT-Ren
PFT of Site : ENF
Time Period : July of 2012

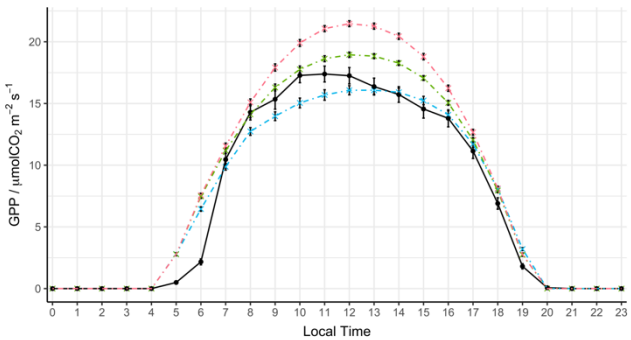
GPP Output
GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

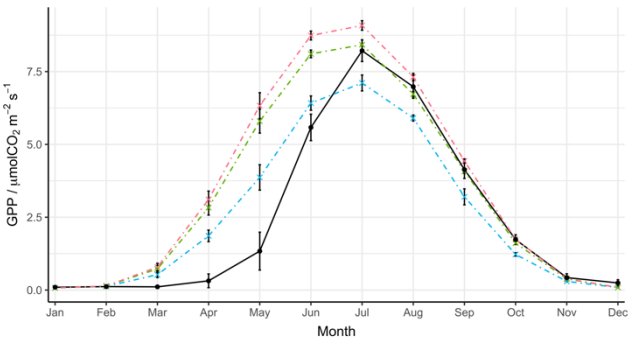
	R^2 / %	B / %	N
TEMIR_FLUX	98.7	-34.3	0.608
TEMIR_MO_on	97.9	0.921	0.9
TEMIR_MO_off	97	-7.48	0.843

Site : IT-Ren
PFT of Site : ENF
Year Range : 2009 – 2013

GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

	R^2 / %	B / %	N
TEMIR_FLUX	94.2	-33.7	0.511
TEMIR_MO_on	96	-12.6	0.811
TEMIR_MO_off	96	-17.8	0.738





Site : IT-Tor
PFT of Site : GRA
Time Period : July of 2012

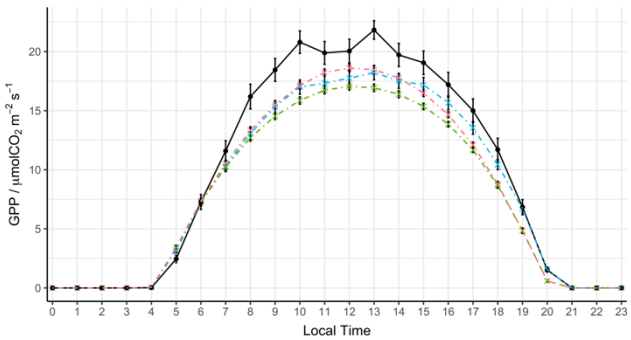
GPP Output
GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

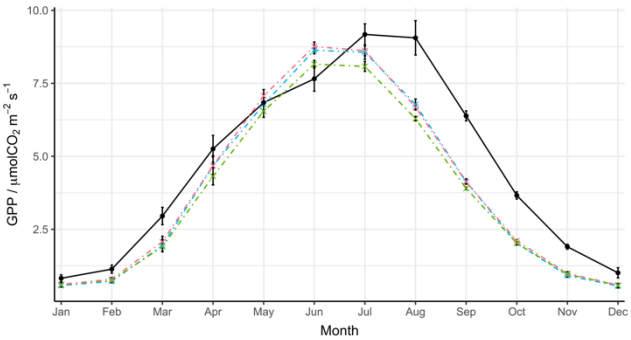
	R^2 / %	B / %	N
TEMIR_FLUX	97.1	1.08	0.881
TEMIR_MO_on	97.7	24.3	0.744
TEMIR_MO_off	97.6	13.8	0.853

Site : IT-Tor
PFT of Site : GRA
Year Range : 2009 – 2013

GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

	R^2 / %	B / %	N
TEMIR_FLUX	86.8	4.78	0.694
TEMIR_MO_on	78.1	44.1	0.559
TEMIR_MO_off	78.4	33	0.637





Site : NL-Loo
PFT of Site : ENF
Time Period : July of 2012

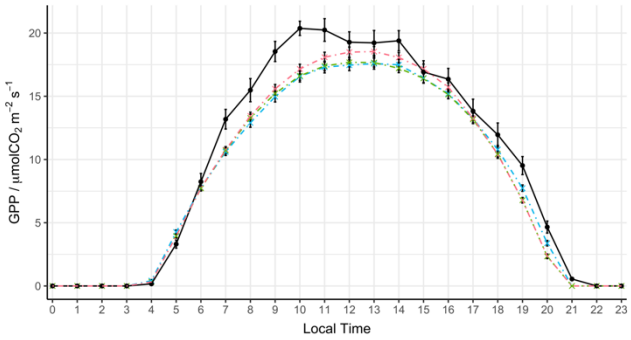
GPP Output
GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

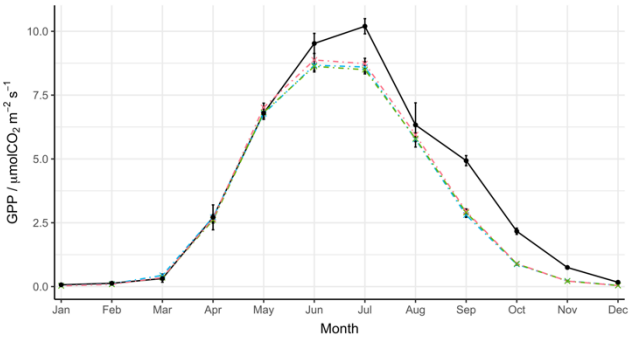
	R^2 / %	B / %	N
TEMIR_FLUX	99.5	-12	0.85
TEMIR_MO_on	99.1	-13.8	0.825
TEMIR_MO_off	99.2	-18.9	0.765

Site : NL-Loo
PFT of Site : ENF
Year Range : 2009 – 2013

GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

	R^2 / %	B / %	N
TEMIR_FLUX	91.6	-17.1	0.65
TEMIR_MO_on	90.5	-15.7	0.652
TEMIR_MO_off	91	-21	0.612





Site : RU-Fyo
PFT of Site : ENF
Time Period : July of 2012

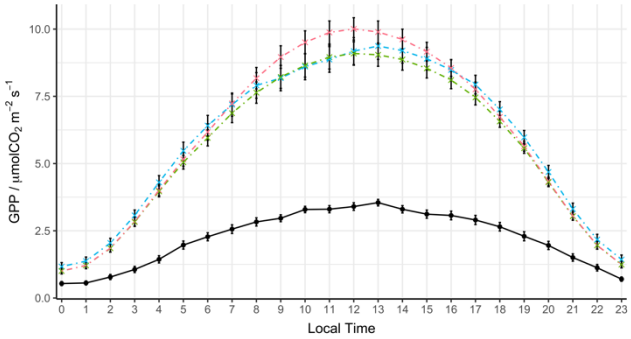
GPP Output
GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

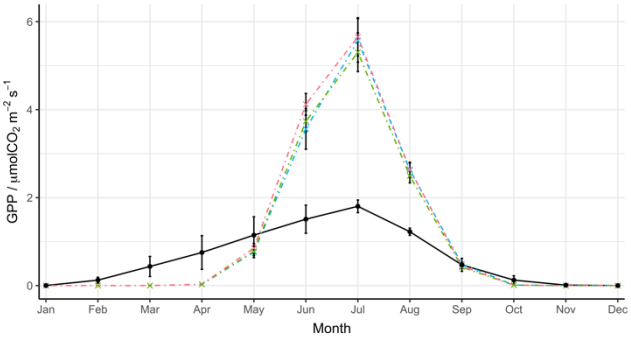
	R^2 / %	B / %	N
TEMIR_FLUX	98.8	-11.7	0.834
TEMIR_MO_on	98.5	-10.1	0.857
TEMIR_MO_off	98.7	-12.6	0.828

Site : RU-Fyo
PFT of Site : ENF
Year Range : 2009 – 2013

GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

	R^2 / %	B / %	N
TEMIR_FLUX	96.7	-16	0.812
TEMIR_MO_on	96.8	-14.2	0.825
TEMIR_MO_off	96.9	-16.4	0.811





Site : RU-Sam
PFT of Site : GRA
Time Period : July of 2012

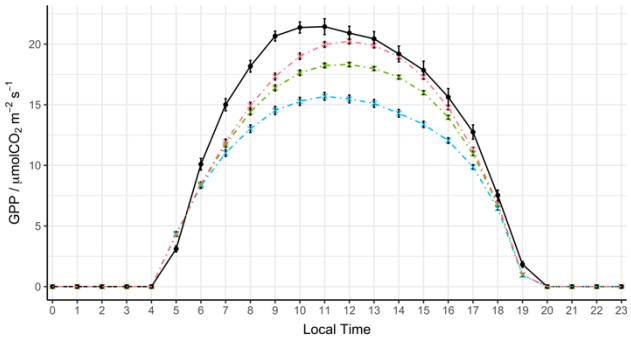
GPP Output
GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

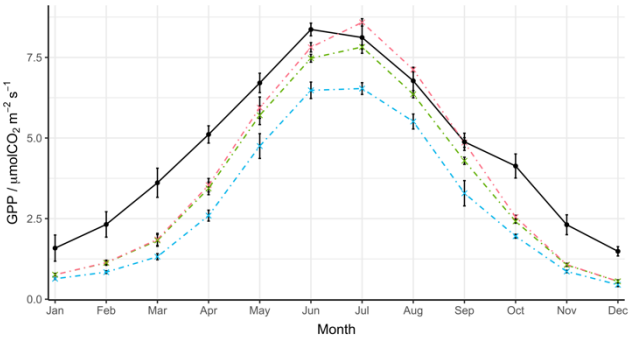
	R^2 / %	B / %	N
TEMIR_FLUX	98.7	168	-3.24
TEMIR_MO_on	98.2	171	-3.32
TEMIR_MO_off	98.6	156	-2.94

Site : RU-Sam
PFT of Site : GRA
Year Range : 2009 – 2013

GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

	R^2 / %	B / %	N
TEMIR_FLUX	78.2	71.7	-0.382
TEMIR_MO_on	79.2	80.9	-0.471
TEMIR_MO_off	79	68	-0.35





Site : US-Me2
PFT of Site : ENF
Time Period : July of 2012

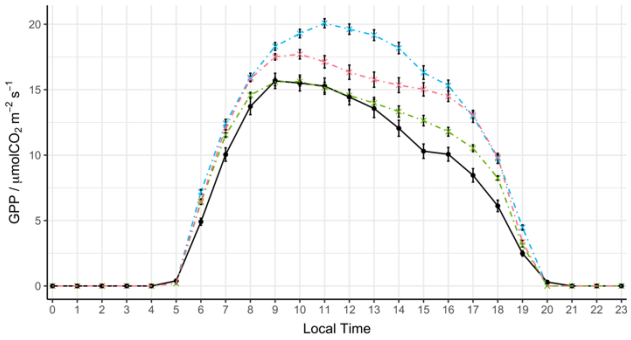
GPP Output
GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

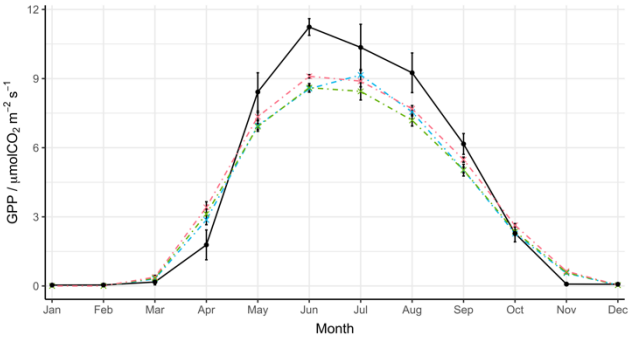
	R^2 / %	B / %	N
TEMIR_FLUX	99.3	-24.9	0.708
TEMIR_MO_on	98.9	-8.75	0.89
TEMIR_MO_off	99.3	-14.5	0.826

Site : US-Me2
PFT of Site : ENF
Year Range : 2009 – 2013

GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

	R^2 / %	B / %	N
TEMIR_FLUX	96.1	-36.4	0.176
TEMIR_MO_on	95.7	-17.4	0.541
TEMIR_MO_off	97.1	-22.7	0.487





Site : US-MMS
PFT of Site : DBF
Time Period : July of 2012

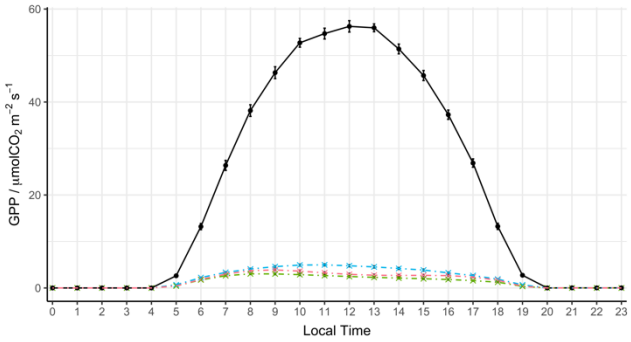
GPP Output
GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

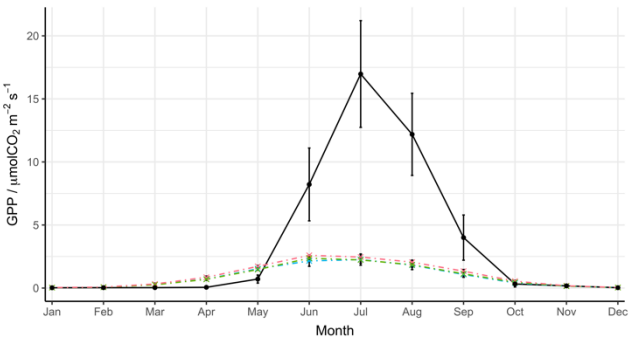
	R^2 / %	B / %	N
TEMIR_FLUX	97.7	36.5	0.587
TEMIR_MO_on	97.5	24.1	0.725
TEMIR_MO_off	98.5	9.12	0.889

Site : US-MMS
PFT of Site : DBF
Year Range : 2009 – 2013

GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

	R^2 / %	B / %	N
TEMIR_FLUX	98.2	-13.2	0.797
TEMIR_MO_on	97.7	-8.58	0.801
TEMIR_MO_off	98	-14.6	0.768





Site : US-Ne1
PFT of Site : CRO
Time Period : July of 2012

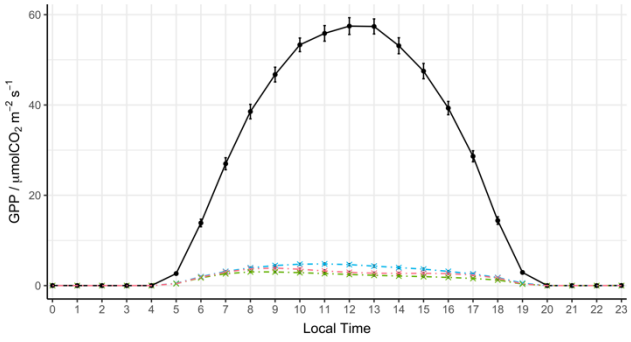
GPP Output
GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

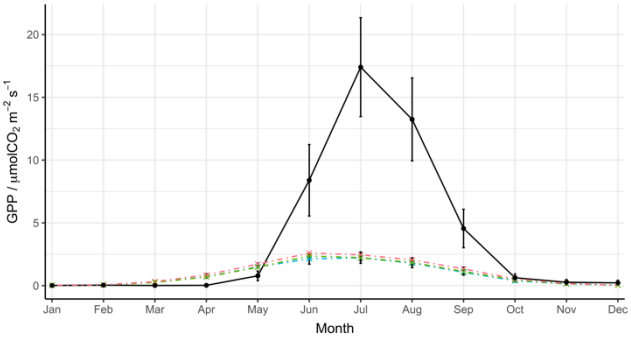
	R^2 / %	B / %	N
TEMIR_FLUX	96.3	-90.3	0.0607
TEMIR_MO_on	86.1	-92.8	0.0353
TEMIR_MO_off	84.3	-94.2	0.0201

Site : US-Ne1
PFT of Site : CRO
Year Range : 2009 – 2013

GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

	R^2 / %	B / %	N
TEMIR_FLUX	72	-75.5	0.338
TEMIR_MO_on	68.5	-71.4	0.349
TEMIR_MO_off	70.8	-74.9	0.343





Site : US-Ne2
PFT of Site : CRO
Time Period : July of 2012

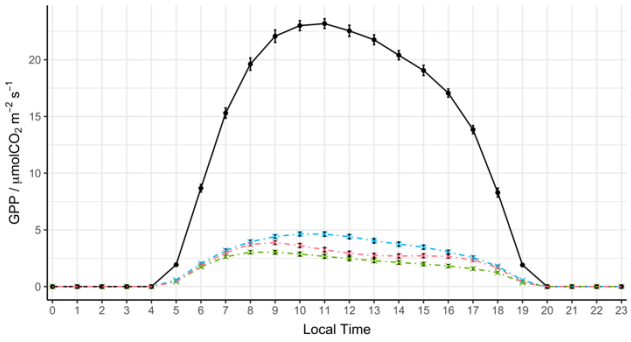
GPP Output
GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

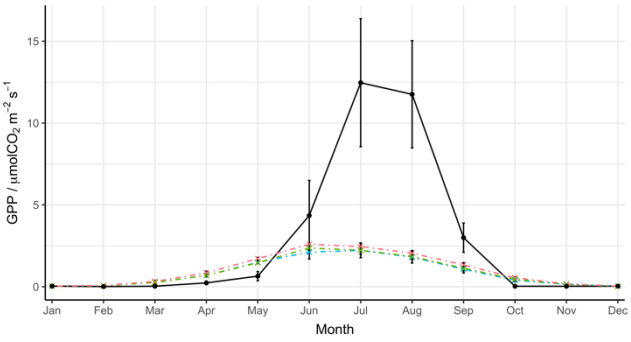
	R^2 / %	B / %	N
TEMIR_FLUX	96.6	-91.1	0.0489
TEMIR_MO_on	86	-93	0.029
TEMIR_MO_off	84	-94.4	0.0141

Site : US-Ne2
PFT of Site : CRO
Year Range : 2009 – 2013

GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

	R^2 / %	B / %	N
TEMIR_FLUX	71.4	-77.3	0.32
TEMIR_MO_on	68.1	-73.2	0.337
TEMIR_MO_off	70.3	-76.5	0.328





Site : US-Ne3
PFT of Site : CRO
Time Period : July of 2012

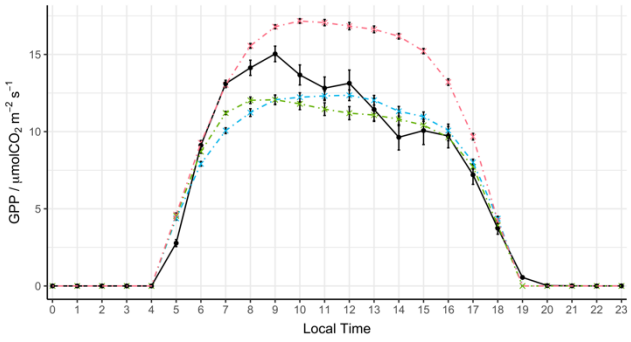
GPP Output
GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

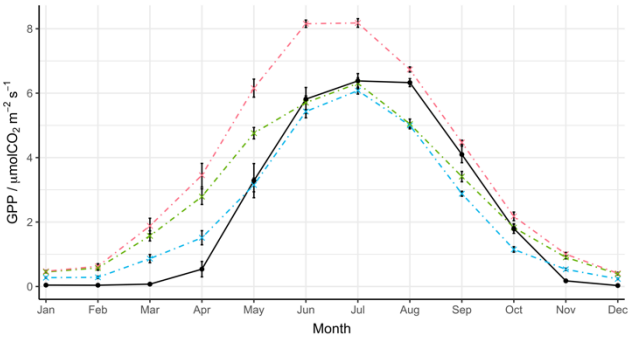
	R^2 / %	B / %	N
TEMIR_FLUX	99.3	-80.3	0.117
TEMIR_MO_on	95.1	-84.1	0.0744
TEMIR_MO_off	93.4	-87.3	0.0391

Site : US-Ne3
PFT of Site : CRO
Year Range : 2009 – 2013

GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

	R^2 / %	B / %	N
TEMIR_FLUX	64.4	-68.3	0.361
TEMIR_MO_on	59.8	-62.6	0.375
TEMIR_MO_off	61.6	-67.1	0.369





Site : US-NR1
PFT of Site : ENF
Time Period : July of 2012

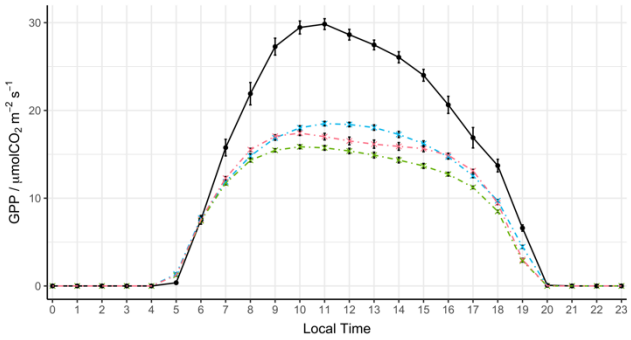
GPP Output
GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

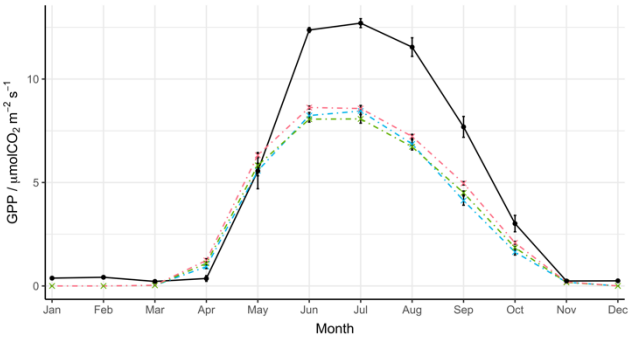
	R^2 / %	B / %	N
TEMIR_FLUX	95.8	-4.7	0.848
TEMIR_MO_on	95.5	26.9	0.692
TEMIR_MO_off	97.4	-6.58	0.867

Site : US-NR1
PFT of Site : ENF
Year Range : 2009 – 2013

GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

	R^2 / %	B / %	N
TEMIR_FLUX	95.1	-4.23	0.756
TEMIR_MO_on	88.8	52.8	0.46
TEMIR_MO_off	87.7	17.9	0.662





Site : US-Oho
PFT of Site : DBF
Time Period : July of 2012

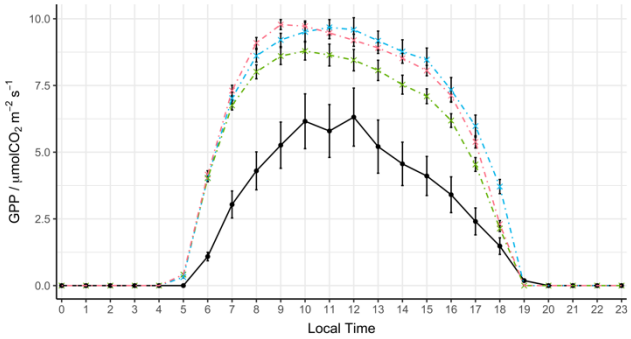
GPP Output
- GPP_DT_VUT_MEAN
- TEMIR_FLUX
- TEMIR_MO_off
- TEMIR_MO_on

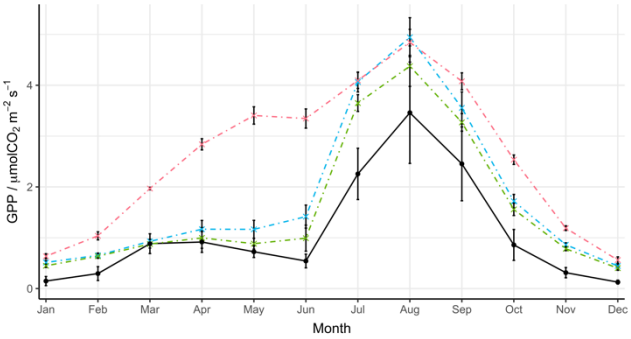
	R^2 / %	B / %	N
TEMIR_FLUX	98.8	-32.3	0.633
TEMIR_MO_on	97.3	-34.9	0.606
TEMIR_MO_off	97.4	-40.8	0.541

Site : US-Oho
PFT of Site : DBF
Year Range : 2009 – 2013

GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

	R^2 / %	B / %	N
TEMIR_FLUX	95.5	-34.2	0.633
TEMIR_MO_on	94.5	-28.3	0.653
TEMIR_MO_off	94.7	-33.6	0.623





Site : US-SRG
PFT of Site : GRA
Time Period : July of 2012

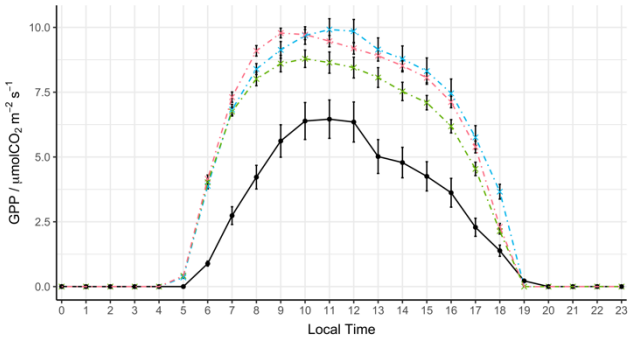
GPP Output
- GPP_DT_VUT_MEAN
- TEMIR_FLUX
- TEMIR_MO_off
- TEMIR_MO_on

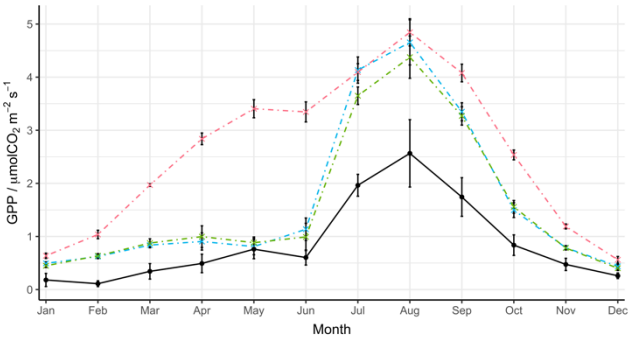
	R^2 / %	B / %	N
TEMIR_FLUX	95.5	90.2	0.0722
TEMIR_MO_on	95.3	86.5	0.11
TEMIR_MO_off	95.5	67.4	0.305

Site : US-SRG
PFT of Site : GRA
Year Range : 2009 – 2013

GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

	R^2 / %	B / %	N
TEMIR_FLUX	95.3	65.2	0.141
TEMIR_MO_on	73	135	-0.783
TEMIR_MO_off	95.7	45.4	0.4





Site : US-SRM
PFT of Site : GRA
Time Period : July of 2012

GPP Output
- GPP_DT_VUT_MEAN
- TEMIR_FLUX
- TEMIR_MO_off
- TEMIR_MO_on

	R^2 / %	B / %	N
TEMIR_FLUX	94.9	86.5	0.119
TEMIR_MO_on	93.8	83.3	0.151
TEMIR_MO_off	93.8	64.5	0.34

Site : US-SRM
PFT of Site : GRA
Year Range : 2009 – 2013

GPP_DT_VUT_MEAN
TEMIR_FLUX
TEMIR_MO_off
TEMIR_MO_on

	R^2 / %	B / %	N
TEMIR_FLUX	96.5	90.3	-0.265
TEMIR_MO_on	74.7	195	-1.74
TEMIR_MO_off	97.3	82.6	-0.157

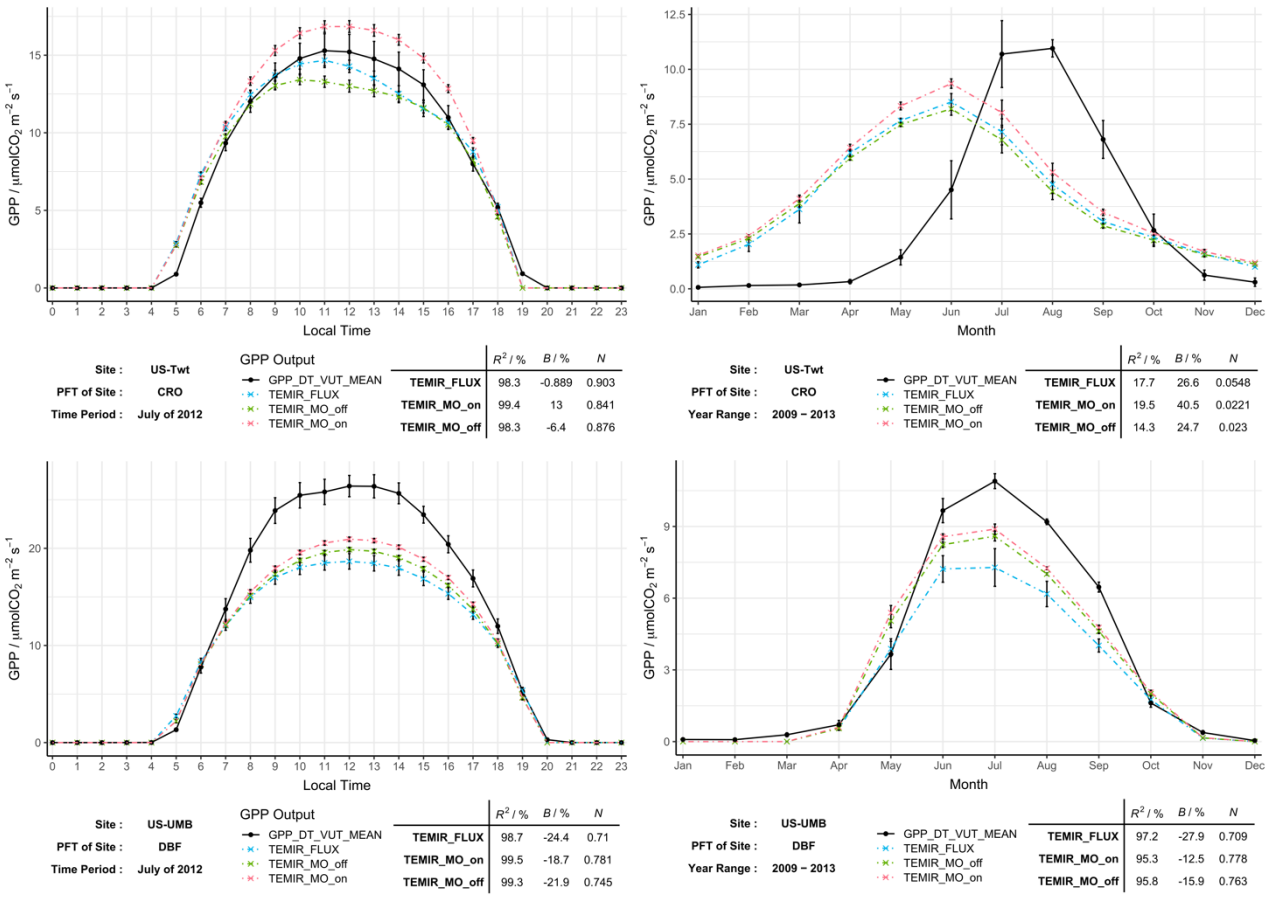


Figure S1: Diurnal and monthly averaged gross primary productivity of sites listed in Table S3 from simulations described in Table 1 with relevant site information and statistics.

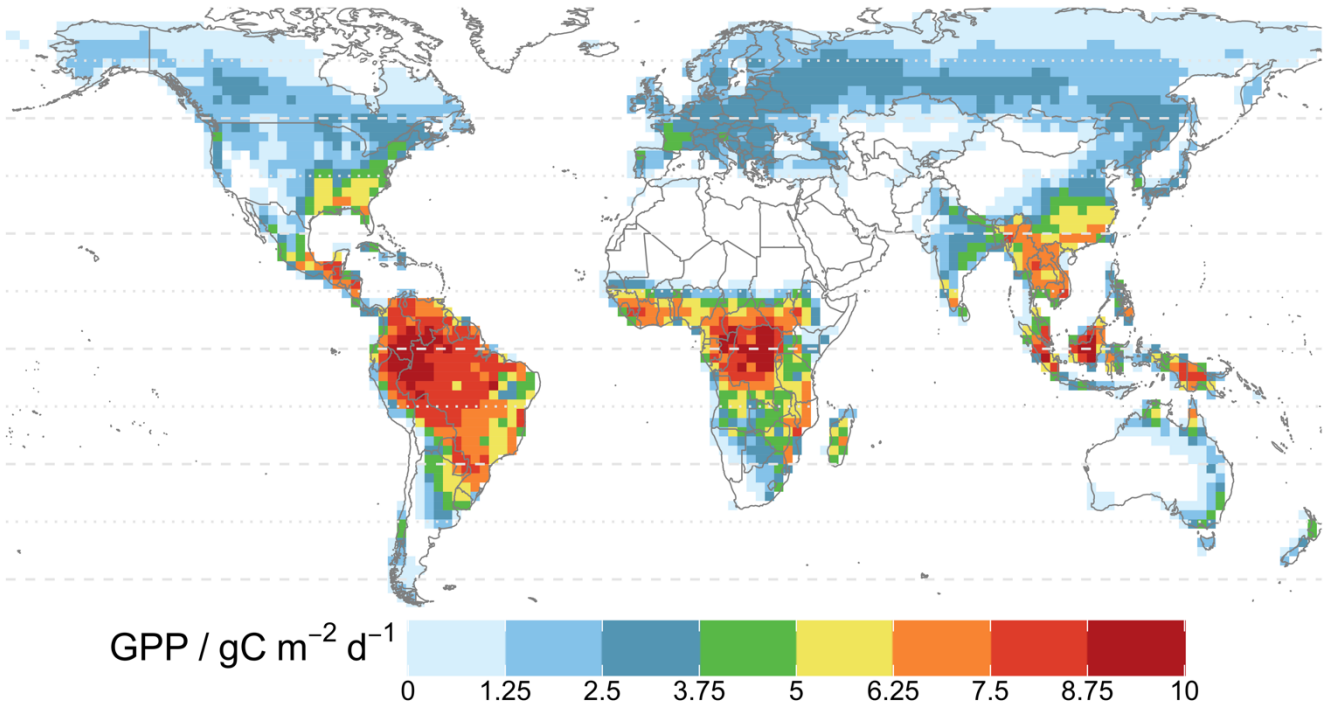


Figure S2: Simulated global GPP averaged over years 2010 to 2015 from simulation TEMIR_MO_off (Table 2)

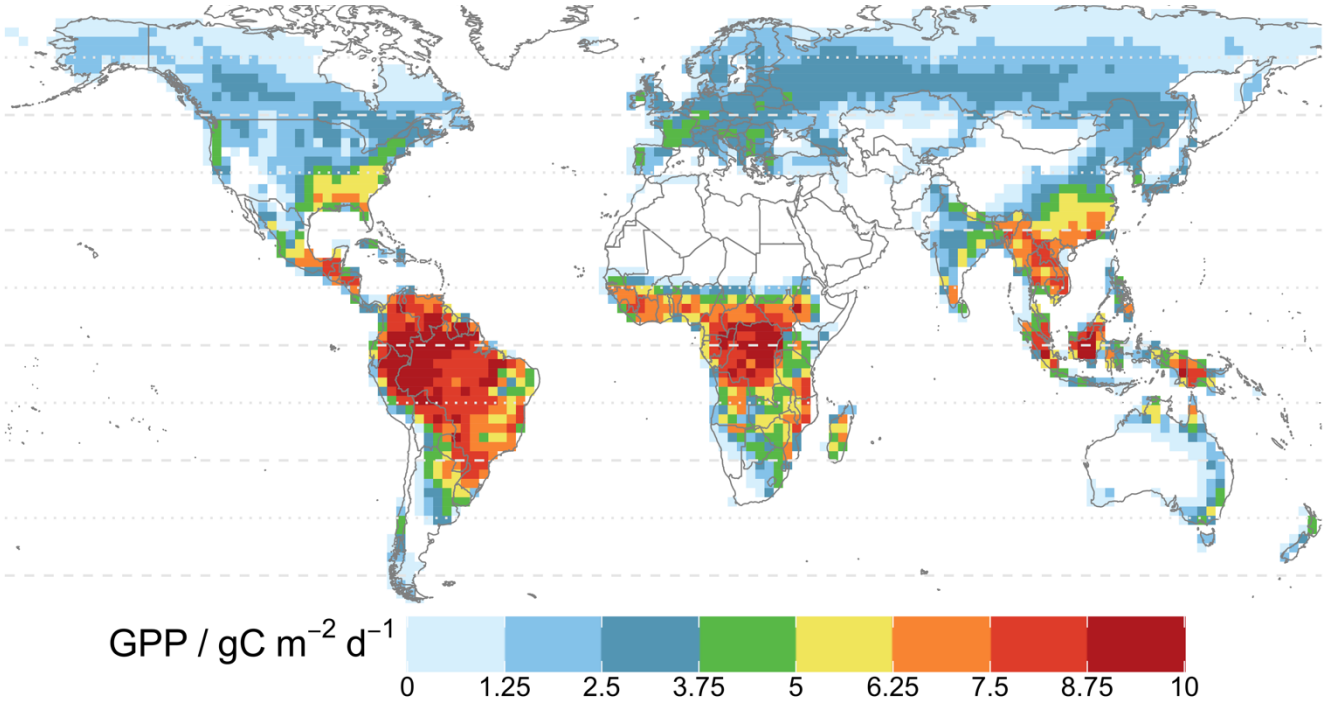


Figure S3: Simulated global GPP averaged over years 2010 to 2015 from simulation TEMIR_MO_on (Table 2)

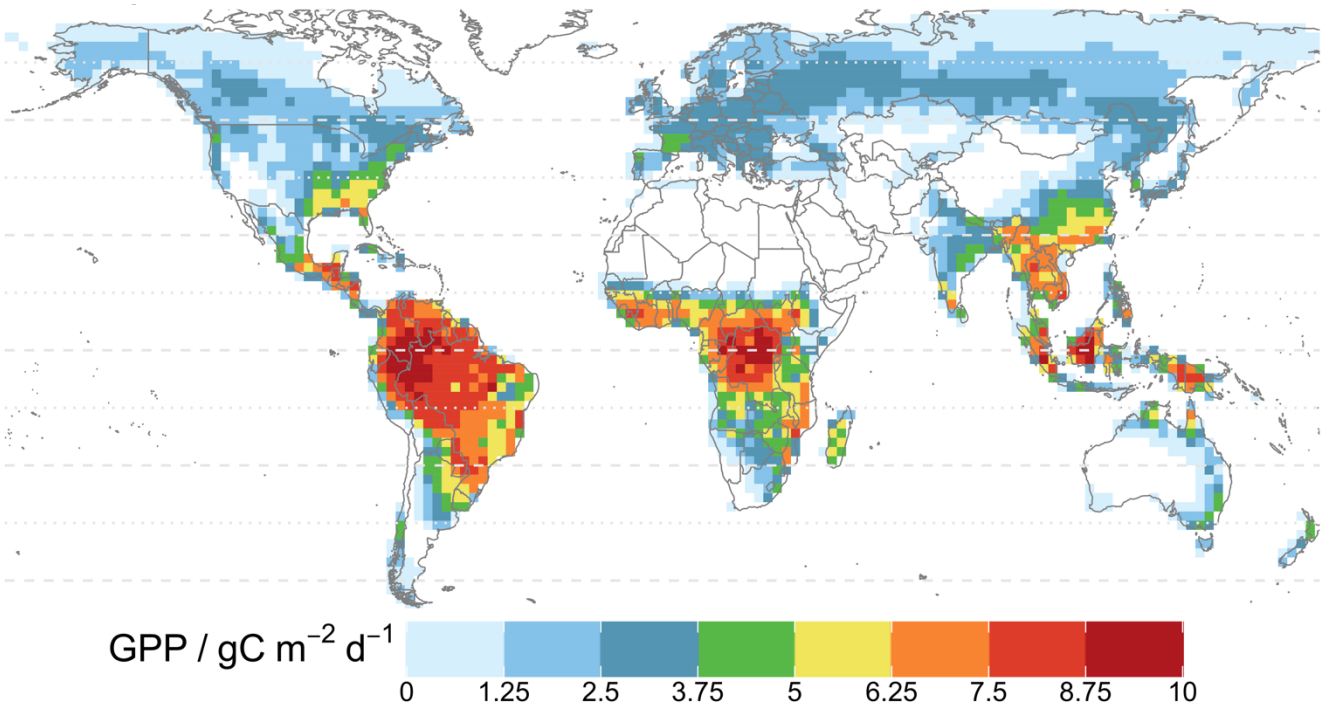


Figure S4: Simulated global GPP averaged over years 2010 to 2015 from simulation TEMIR_Sl (Table 2)

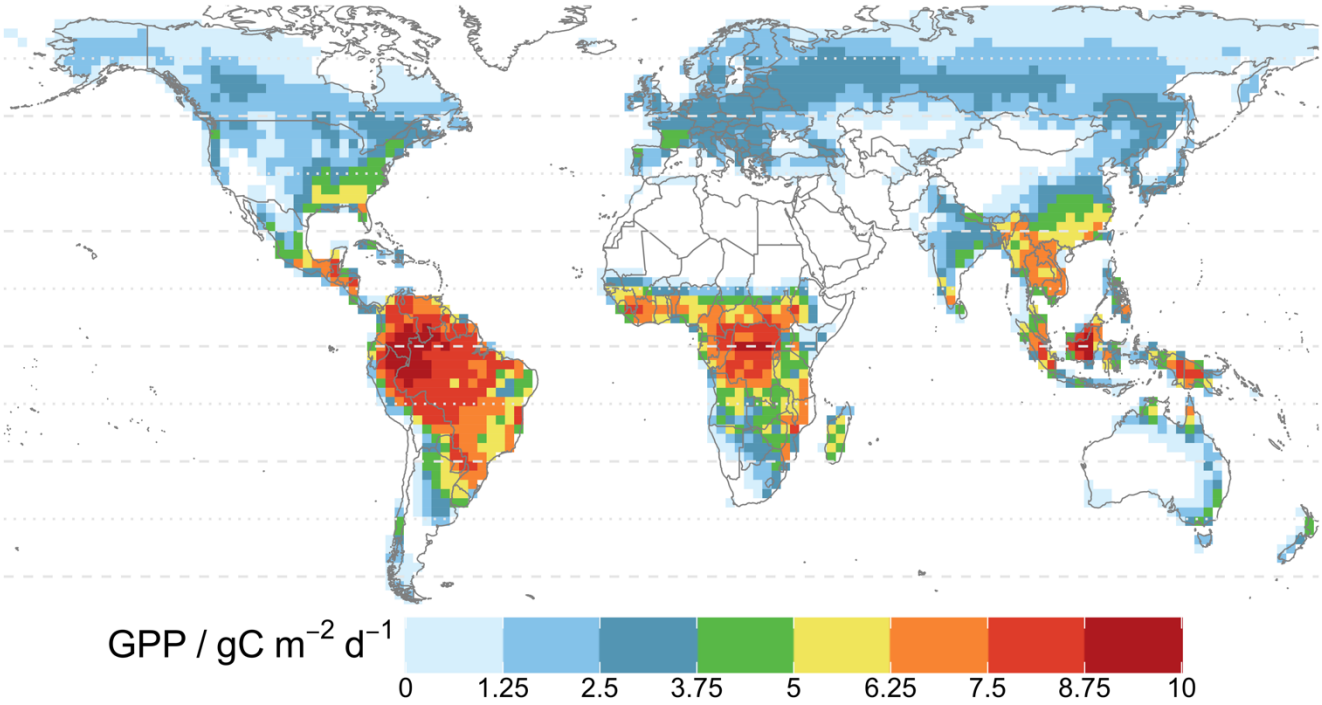


Figure S5: Simulated global GPP averaged over years 2010 to 2015 from simulation TEMIR_Sh (Table 2)