

Lago di Fimon Data: MI and P_{ann} corrections (45.469951, 11.543468)

Calculate daily mean temperature

```
fimon_tmp <- rowMeans(fimon[, c("T_djf", "T_jja")])
```

Obtain past CO2 from (Bereiter et al. 2015)

```
past_co2 <- fimon %>%  
  .$age_cal_yr_BP %>%  
  purrr::map_dbl(codos::past_co2)
```

Obtain modern CO2 from (Bereiter et al. 2015)

```
modern_co2 <- tibble::tibble(age = 1950 - c(1901:1990),  
                             co2 = purrr::map_dbl(age, codos::past_co2)) %>%  
  .$co2 %>%  
  median()
```

Assemble the *Lago di Fimon* data

```
fimon2 <- tibble::tibble(age_calBP = fimon$age_cal_yr_BP,  
                        past_temp = fimon_tmp,  
                        past_co2 = past_co2,  
                        modern_co2 = modern_co2,  
                        present_t = fimon_tmp,  
                        recon_mi = fimon$MI)
```

Find the corrected MI

```
fimon2$corr_mi <- codos::corrected_mi(fimon2$present_t,  
                                     fimon2$past_temp,  
                                     fimon2$recon_mi,  
                                     fimon2$modern_co2,  
                                     fimon2$past_co2)
```

age cal yr BP	past temp	past co2	modern co2	present temp	recon. MI	corr. MI
12548	3.454359	247.095	311.765	3.454359	0.6104173	0.7316454
12737	3.247748	244.445	311.765	3.247748	0.5603200	0.6869662
12927	3.075803	238.485	311.765	3.075803	0.7353834	0.8778865
13116	3.911154	238.190	311.765	3.911154	0.7079373	0.8523638

Read “modern” data - Quinto Vicentino

```
quinto_vicentino_precip <- readr::read_csv("/path/to/fimon-lake/quinto_vicentino_precip.csv",
                                           na = ">>") %>%
  magrittr::set_names(tolower(colnames(.)))
quinto_vicentino_tmin <- readr::read_csv("/path/to/fimon-lake/quinto_vicentino_tmin.csv",
                                           na = ">>") %>%
  magrittr::set_names(tolower(colnames(.)))
quinto_vicentino_tmax <- readr::read_csv("/path/to/fimon-lake/quinto_vicentino_tmax.csv",
                                           na = ">>") %>%
  magrittr::set_names(tolower(colnames(.)))
```

P_ann

year	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dic
1994	47.4	34.0	3.6	139.6	75.6	45.6	97.0	22.6	272.0	87.6	87.6	39.0
1995	55.2	95.6	45.8	65.6	220.2	161.8	58.2	121.8	178.8	10.2	57.6	221.2
1996	123.6	56.6	18.8	122.8	118.0	62.2	63.8	129.0	54.2	198.6	162.2	142.6
1997	110.4	4.8	10.2	63.4	50.8	76.6	91.0	78.6	22.8	6.8	121.0	158.2
1998	48.6	34.4	7.0	198.8	53.4	54.8	6.4	5.0	202.6	204.6	18.2	19.2
1999	51.4	11.8	57.8	147.4	111.8	127.2	108.2	84.6	83.2	130.8	119.2	55.0
2000	3.0	3.8	95.4	70.4	84.8	34.4	45.4	53.6	88.8	163.4	244.6	66.6
2001	106.4	13.2	162.4	80.2	30.4	13.4	97.8	68.2	84.2	41.6	57.6	2.4
2002	42.2	111.8	13.4	200.2	211.6	114.4	101.8	182.0	81.6	81.6	149.4	88.8
2003	60.0	5.2	2.2	129.6	15.8	70.8	35.2	23.2	75.2	123.2	178.0	164.0
2004	48.8	221.4	93.6	101.2	146.4	106.0	72.2	63.8	128.4	155.4	122.6	102.2
2005	4.2	2.4	28.6	186.0	103.2	106.4	194.0	114.2	90.8	168.2	169.2	77.0
2006	44.8	47.4	35.4	123.6	113.2	33.0	30.2	189.4	166.6	19.2	37.2	60.0
2007	30.6	49.0	84.0	12.6	162.6	41.8	64.0	77.2	87.4	61.8	54.6	13.2
2008	97.6	42.6	54.8	130.6	124.2	127.6	99.8	53.6	89.6	66.8	201.2	240.4
2009	105.0	79.4	155.6	169.0	9.0	44.2	75.2	81.2	147.8	56.6	145.8	93.2
2010	62.8	158.4	51.6	31.6	120.6	105.6	136.0	79.2	210.8	211.2	270.2	226.6
2011	44.2	64.8	105.4	16.2	43.2	119.2	108.0	10.2	61.4	137.0	100.8	45.8
2012	12.6	19.4	7.0	100.2	117.6	23.0	43.4	61.4	94.8	140.2	234.8	57.8
2013	108.0	83.6	264.0	106.2	222.4	31.6	64.4	113.0	41.4	94.6	139.2	52.4
2014	320.0	271.2	80.8	88.8	68.6	116.4	220.4	98.8	105.2	66.8	185.6	83.2
2015	36.0	63.0	86.8	48.4	71.8	81.4	75.6	47.2	122.2	141.6	13.8	0.0
2016	58.2	228.8	85.4	90.4	248.8	85.6	11.8	83.4	75.6	126.0	91.6	0.4
2017	14.8	93.6	16.0	81.2	74.0							
2018												

Tmin

year	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dic
1994	0.2	-0.4	5.0	5.9	11.3	14.8	17.7	16.9	13.7	7.4	6.4	1.1
1995	-2.7	0.5	1.9	5.2	10.5	13.7	18.0	15.3	10.7	7.5	2.4	1.4
1996	1.3	-1.7	1.4	6.8	10.7	14.2	14.9	15.0	10.5	8.4	4.4	0.0
1997	0.2	-0.3	2.5	3.3	11.3	15.0	14.8	16.1	12.0	7.0	4.6	1.4
1998	0.4	-0.8	0.9	6.6	11.1	15.3	16.6	15.9	12.3	7.9	0.7	-2.9
1999	-2.1	-3.0	2.9	6.8	13.1	14.6	16.9	16.8	13.8	8.9	2.5	-1.9
2000	-4.0	-1.3	2.7	8.5	12.6	15.0	14.7	16.0	12.3	10.3	5.8	1.6
2001	1.6	-0.3	5.2	5.0	13.2	13.1	16.3	16.7	9.9	10.4	1.3	-5.3
2002	-5.0	0.9	3.0	6.3	11.4	16.0	16.5	15.9	12.2	8.7	6.5	2.5
2003	-1.3	-3.8	1.9	5.8	11.8	17.7	17.2	18.8	10.9	6.4	5.7	-0.1
2004	-2.0	-0.9	3.0	7.4	9.8	14.8	16.3	16.5	11.8	11.8	3.3	0.5
2005	-3.7	-3.4	1.6	6.0	11.3	15.6	16.9	14.7	13.9	9.3	3.3	-2.2
2006	-3.3	-1.0	1.8	7.0	11.3	14.9	18.6	14.4	13.9	9.7	4.1	1.1
2007	1.0	1.7	4.0	8.5	12.4	15.8	15.6	15.6	11.0	7.4	1.5	-1.5
2008	0.9	-0.6	2.5	6.6	12.3	16.2	16.7	17.0	12.5	8.7	4.5	0.8
2009	-0.8	-0.2	2.8	8.7	13.2	15.2	17.3	18.2	14.3	8.3	6.3	-0.6
2010	-1.2	0.7	3.1	7.2	12.0	16.2	18.4	16.3	12.1	7.0	5.4	-1.1
2011	-0.5	0.5	3.6	8.3	12.3	16.3	16.6	17.9	16.0	7.6	2.9	0.2
2012	-3.0	-3.2	4.0	7.8	11.9	16.6	18.3	18.1	14.3	10.0	6.2	-0.8
2013	0.5	-0.2	3.7	9.0	11.0	15.6	18.5	17.1	13.5	11.5	5.7	0.6
2014	3.6	4.6	5.3	9.2	12.0	16.1	17.1	15.9	13.6	11.3	8.4	3.1
2015	0.0	1.7	4.0	7.2	13.5	16.7	20.0	18.1	14.1	10.0	4.0	-0.1
2016	-0.7	3.5	4.9	9.0	11.6	16.0	18.4	16.3	14.5	8.9	5.2	-1.3
2017	-4.5	2.6	4.8	8.0	12.4							
2018												

Tmax

year	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dic
1994	0.2	-0.4	5.0	5.9	11.3	14.8	17.7	16.9	13.7	7.4	6.4	1.1
1995	-2.7	0.5	1.9	5.2	10.5	13.7	18.0	15.3	10.7	7.5	2.4	1.4
1996	1.3	-1.7	1.4	6.8	10.7	14.2	14.9	15.0	10.5	8.4	4.4	0.0
1997	0.2	-0.3	2.5	3.3	11.3	15.0	14.8	16.1	12.0	7.0	4.6	1.4
1998	0.4	-0.8	0.9	6.6	11.1	15.3	16.6	15.9	12.3	7.9	0.7	-2.9

year	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dic
1999	-2.1	-3.0	2.9	6.8	13.1	14.6	16.9	16.8	13.8	8.9	2.5	-1.9
2000	-4.0	-1.3	2.7	8.5	12.6	15.0	14.7	16.0	12.3	10.3	5.8	1.6
2001	1.6	-0.3	5.2	5.0	13.2	13.1	16.3	16.7	9.9	10.4	1.3	-5.3
2002	-5.0	0.9	3.0	6.3	11.4	16.0	16.5	15.9	12.2	8.7	6.5	2.5
2003	-1.3	-3.8	1.9	5.8	11.8	17.7	17.2	18.8	10.9	6.4	5.7	-0.1
2004	-2.0	-0.9	3.0	7.4	9.8	14.8	16.3	16.5	11.8	11.8	3.3	0.5
2005	-3.7	-3.4	1.6	6.0	11.3	15.6	16.9	14.7	13.9	9.3	3.3	-2.2
2006	-3.3	-1.0	1.8	7.0	11.3	14.9	18.6	14.4	13.9	9.7	4.1	1.1
2007	1.0	1.7	4.0	8.5	12.4	15.8	15.6	15.6	11.0	7.4	1.5	-1.5
2008	0.9	-0.6	2.5	6.6	12.3	16.2	16.7	17.0	12.5	8.7	4.5	0.8
2009	-0.8	-0.2	2.8	8.7	13.2	15.2	17.3	18.2	14.3	8.3	6.3	-0.6
2010	-1.2	0.7	3.1	7.2	12.0	16.2	18.4	16.3	12.1	7.0	5.4	-1.1
2011	-0.5	0.5	3.6	8.3	12.3	16.3	16.6	17.9	16.0	7.6	2.9	0.2
2012	-3.0	-3.2	4.0	7.8	11.9	16.6	18.3	18.1	14.3	10.0	6.2	-0.8
2013	0.5	-0.2	3.7	9.0	11.0	15.6	18.5	17.1	13.5	11.5	5.7	0.6
2014	3.6	4.6	5.3	9.2	12.0	16.1	17.1	15.9	13.6	11.3	8.4	3.1
2015	0.0	1.7	4.0	7.2	13.5	16.7	20.0	18.1	14.1	10.0	4.0	-0.1
2016	-0.7	3.5	4.9	9.0	11.6	16.0	18.4	16.3	14.5	8.9	5.2	-1.3
2017	-4.5	2.6	4.8	8.0	12.4							
2018												

Summary

year	P_ann_djf	P_ann_jja	Tmax_djf	Tmax_jja	Tmin_djf	Tmin_jja
1994	40.7	55.06667	9.05	30.20000	-0.10	16.46667
1995	75.4	113.93333	8.80	27.90000	-1.10	15.66667
1996	90.1	85.00000	7.70	27.90000	-0.20	14.70000
1997	57.6	82.06667	9.95	28.00000	-0.05	15.30000
1998	41.5	22.06667	10.65	30.00000	-0.20	15.93333
1999	31.6	106.66667	8.60	29.20000	-2.55	16.10000
2000	3.4	44.46667	8.80	29.53333	-2.65	15.23333
2001	59.8	59.80000	10.35	30.96667	0.65	15.36667
2002	77.0	132.73333	9.35	30.06667	-2.05	16.13333
2003	32.6	43.06667	8.45	32.36667	-2.55	17.90000
2004	135.1	80.66667	6.90	29.30000	-1.45	15.86667

year	P_ann_djf	P_ann_jja	Tmax_djf	Tmax_jja	Tmin_djf	Tmin_jja
2005	3.3	138.20000	7.85	28.73333	-3.55	15.73333
2006	46.1	84.20000	7.55	29.76667	-2.15	15.96667
2007	39.8	61.00000	11.20	29.46667	1.35	15.66667
2008	70.1	93.66667	9.70	29.96667	0.15	16.63333
2009	92.2	66.86667	8.80	30.36667	-0.50	16.90000
2010	110.6	106.93333	7.60	29.13333	-0.25	16.96667
2011	54.5	79.13333	8.40	29.06667	0.00	16.93333
2012	16.0	42.60000	7.55	30.83333	-3.10	17.66667
2013	95.8	69.66667	7.55	29.50000	0.15	17.06667
2014	295.6	145.20000	10.10	27.73333	4.10	16.36667
2015	49.5	68.06667	9.65	30.96667	0.85	18.26667
2016	143.5	60.26667	9.35	29.36667	1.40	16.90000
2017	54.2		7.75		-0.95	
2018						

Find the corrected Annual Precipitation, P_{ann}

Approximated as the ratio

$$MI_{\text{ratio}} = \frac{\text{corrected}}{\text{reconstructed}}$$

multiplied by reconstructed P_{ann}.

```
mi_ratio <- fimon2$corr_mi / fimon2$recon_mi
fimon2$corr_P_ann <- fimon2$P_ann * mi_ratio

fimon2 %>%
  write.csv(file = "fimon-with-corrected-mi.csv",
            row.names = FALSE)

# Small subset
knitr::kable(head(fimon2, 13),
              col.names = c("age cal yr BP",
                           "past temp",
                           "past co2",
                           "modern co2",
                           "present temp",
                           "recon. MI",
                           "corr. MI",
                           "corr. Pann"))
```

age cal yr BP	past temp	past co2	modern co2	present temp	recon. MI	corr. MI	corr. Pann
12548	3.4543590	247.095	311.765	3.4543590	0.6104173	0.7316454	695.9629
12737	3.2477475	244.445	311.765	3.2477475	0.5603200	0.6869662	651.1892
12927	3.0758030	238.485	311.765	3.0758030	0.7353834	0.8778865	802.0966
13116	3.9111540	238.190	311.765	3.9111540	0.7079373	0.8523638	798.8171
13331	4.3190895	236.860	311.765	4.3190895	0.7216559	0.8703531	794.2388
13590	6.1764505	243.860	311.765	6.1764505	0.7688588	0.9038530	764.4565
13850	4.6494470	238.515	311.765	4.6494470	0.7732308	0.9188861	745.9564
14109	6.8067195	234.640	311.765	6.8067195	0.7948950	0.9553984	780.1565
14369	5.5827470	239.360	311.765	5.5827470	0.7913471	0.9368191	756.9057
14578	-0.3982995	238.870	311.765	-0.3982995	0.5087981	0.6426420	511.1847
14757	0.0404540	227.900	311.765	0.0404540	0.4701792	0.6310859	512.4182
14936	0.3125450	228.680	311.765	0.3125450	0.4698498	0.6292391	517.2010
15115	0.1059080	232.070	311.765	0.1059080	0.4666316	0.6171397	501.4140

Check out and download the entire dataset in Appendix A1.

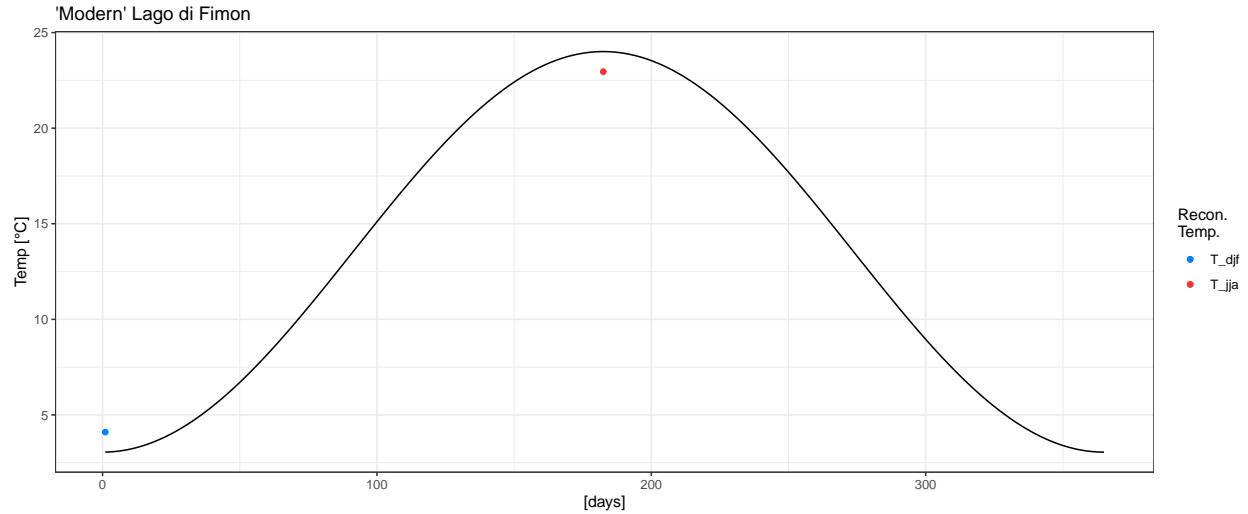
New corrections

Calculate temperature anomalies

Using both T_{djf} and T_{jja} for each record, a sinusoidal curve was fitted using the `int_sin` function.

```
fimon <- fimon %>%
  dplyr::mutate(Tmean = (T_jja + T_djf) / 2) %>%
  dplyr::mutate(Tmax = Tmean + (T_jja - Tmean) / 0.9) %>%
  dplyr::mutate(Tmin = Tmean + (T_djf - Tmean) / 0.9)
```

#> `summarise()` has grouped output by 'year'. You can override using the `.groups` argument.



Data from the weather station Quinto Vicentino was used as the baseline to calculate the temperature anomalies.

year	P_ann	Tmin	Tmax	Tmean
1994	79.30000	8.333333	19.06667	13.700000
1995	107.66667	7.033333	18.27500	12.654167
1996	104.36667	7.158333	17.66667	12.412500
1997	66.21667	7.325000	19.17500	13.250000
1998	71.08333	7.000000	19.10000	13.050000
1999	90.70000	7.441667	18.95000	13.195833
2000	79.51667	7.850000	19.55000	13.700000
2001	63.15000	7.258333	20.28333	13.770833
2002	114.90000	7.908333	19.65833	13.783333
2003	73.53333	7.583333	19.82500	13.704167
2004	113.50000	7.691667	18.73333	13.212500
2005	103.68333	6.941667	18.41667	12.679167
2006	75.00000	7.708333	19.49167	13.600000
2007	61.56667	7.750000	20.05000	13.900000

year	P_ann	Tmin	Tmax	Tmean
2008	110.73333	8.175000	19.27500	13.725000
2009	96.83333	8.558333	19.86667	14.212500
2010	138.71667	8.008333	18.21667	13.112500
2011	71.35000	8.475000	19.90000	14.187500
2012	76.01667	8.350000	19.39167	13.870833
2013	110.06667	8.875000	18.35000	13.612500
2014	142.15000	10.016667	19.51667	14.766667
2015	65.65000	9.100000	19.74167	14.420833
2016	98.83333	8.858333	19.20000	14.029167
2017	55.92000	4.660000	15.12000	9.890000
2018	90.43556	13.435000	19.03417	7.835833

where

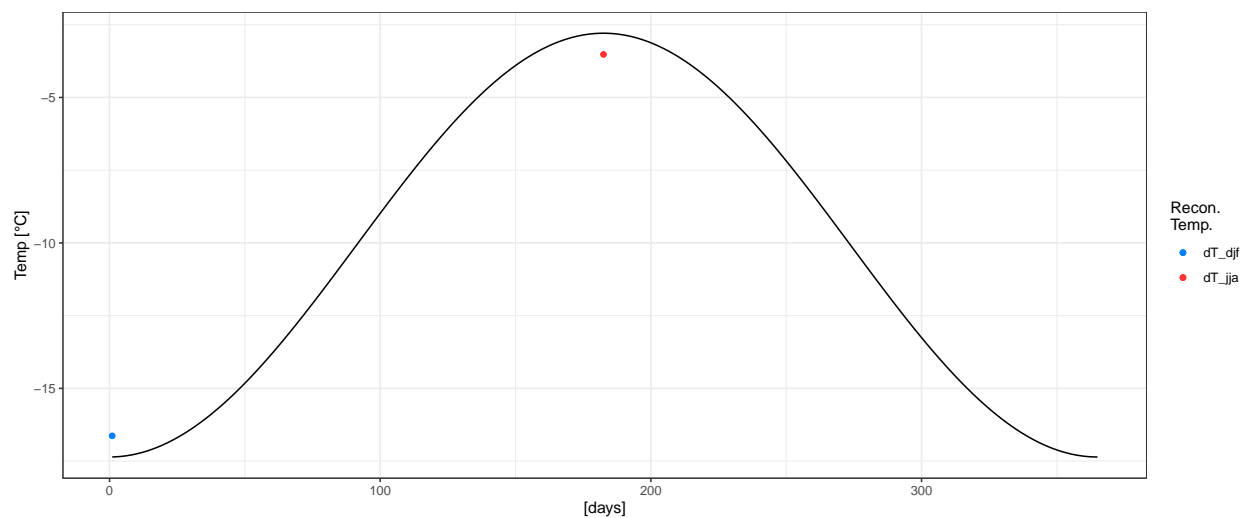
$$T_{\text{mean}} = (T_{\text{jja}} + T_{\text{djf}})/2$$

$$T_{\text{max}} = T_{\text{mean}} + (T_{\text{jja}} - T_{\text{mean}})/0.9$$

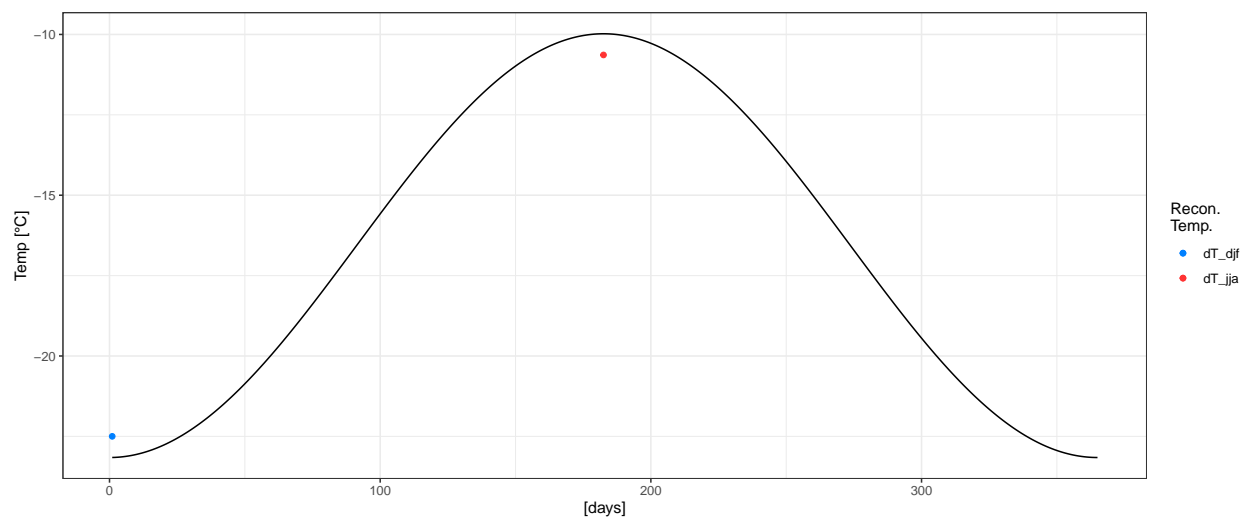
$$T_{\text{min}} = T_{\text{mean}} + (T_{\text{djf}} - T_{\text{mean}})/0.9$$

```
fimon_anomalies <- seq_len(nrow(fimon)) %>%
  purrr::map(~codos::int_sin(fimon$Tmin[.x] - fimon_modern$Tmin,
                             fimon$Tmax[.x] - fimon_modern$Tmax))
```


Padul: Anomaly for age = 12548 cal yr BP



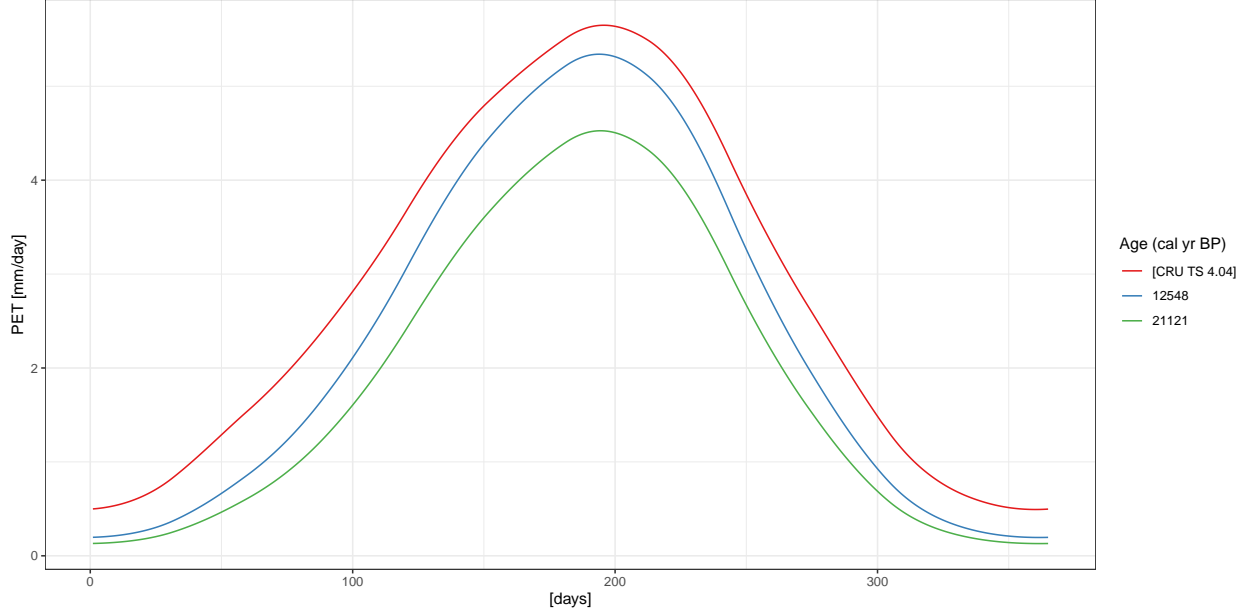
Padul: Anomaly for age = 21121 cal yr BP



Calculate potential evapotranspiration (PET)

Params (splash::calc_daily_evap)

- Latitude: 45.469951
- Elevation: 8
- Year: 1961
- Sunshine fraction: [CRU TS 4.04]
- Temperature: [CRU TS 4.04] + $T_{\text{anomalies}}$



Calculate corrected Precipitation

Using corrected MI and PET (calculated from modern temperature [CRU TS 4.04] and Padul temperature anomalies).

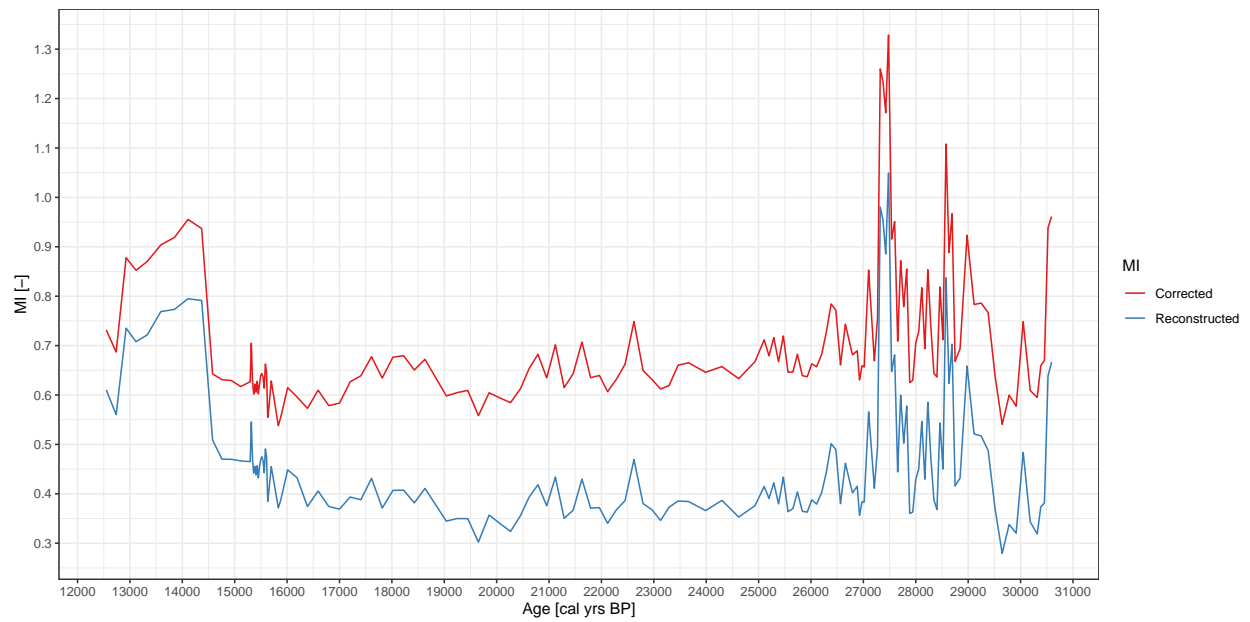
$$\text{corrected } P_{\text{ann}} = \text{MI} \times \text{PET}_{\text{ann}}$$

age_cal_yr_BP	MI	P_ann	corr_mi	corr_P_ann (MI ratio)	corr_P_ann (Tmp anomalies)
12548	0.6104173	580.6471	0.7316454	695.9629	620.4586
12737	0.5603200	531.1387	0.6869662	651.1892	580.5599
12927	0.7353834	671.8961	0.8778865	802.0966	740.1681
13116	0.7079373	663.4637	0.8523638	798.8171	726.1591
13331	0.7216559	658.5455	0.8703531	794.2388	750.0890
13590	0.7688588	650.2817	0.9038530	764.4565	791.0205
13850	0.7732308	627.7127	0.9188861	745.9564	780.6783
14109	0.7948950	649.0931	0.9553984	780.1565	840.2852
14369	0.7913471	639.3712	0.9368191	756.9057	813.0430

age_cal_yr_BP	MI	P_ann	corr_mi	corr_P_ann (MI ratio)	corr_P_ann (Tmp anomalies)
14578	0.5087981	404.7196	0.6426420	511.1847	478.1414
14757	0.4701792	381.7680	0.6310859	512.4182	473.6828
14936	0.4698498	386.1915	0.6292391	517.2010	479.3410
15115	0.4666316	379.1291	0.6171397	501.4140	467.4920
15295	0.4651172	373.2063	0.6269644	503.0712	457.8669
15317	0.5454642	415.9699	0.7047383	537.4320	511.9794
15339	0.4719894	365.1981	0.6299595	487.4262	465.0946
15362	0.4419405	335.6987	0.6018464	457.1635	433.2143
15384	0.4556153	360.9716	0.6223141	493.0425	463.1285
15407	0.4382268	356.2088	0.6058159	492.4321	457.3134
15429	0.4567170	370.4210	0.6275584	508.9822	475.5477

Plots

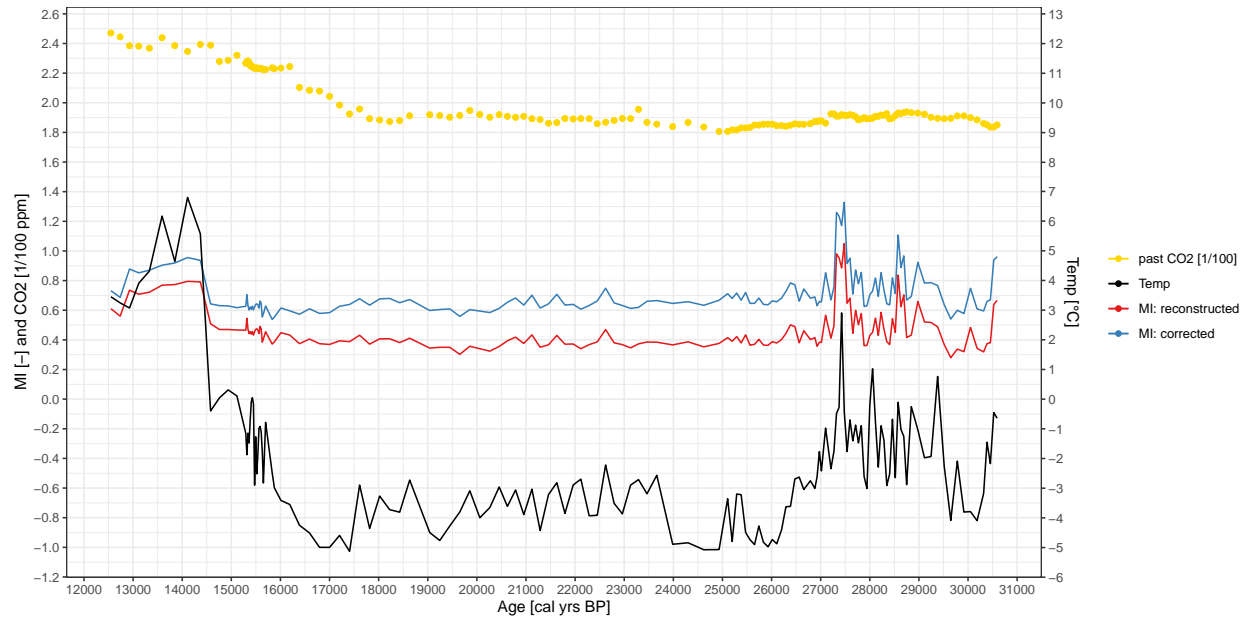
Reconstructed vs corrected MI: Past CO2 calculated using mean



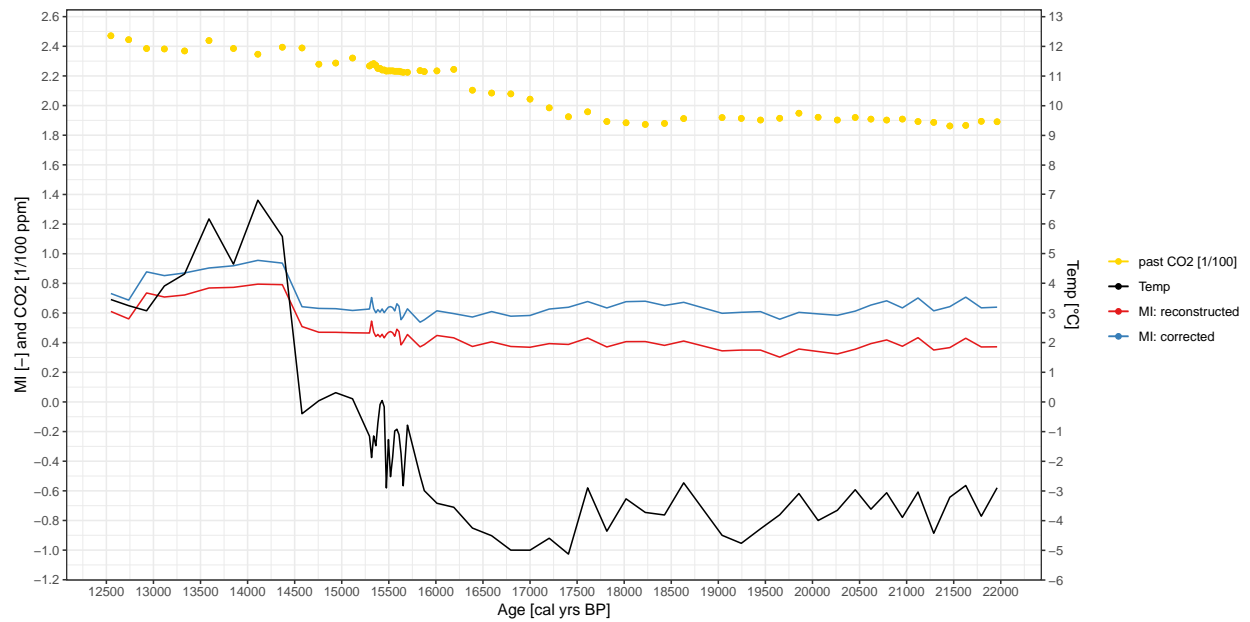
- age < 22k



Include past CO2 and Temperature

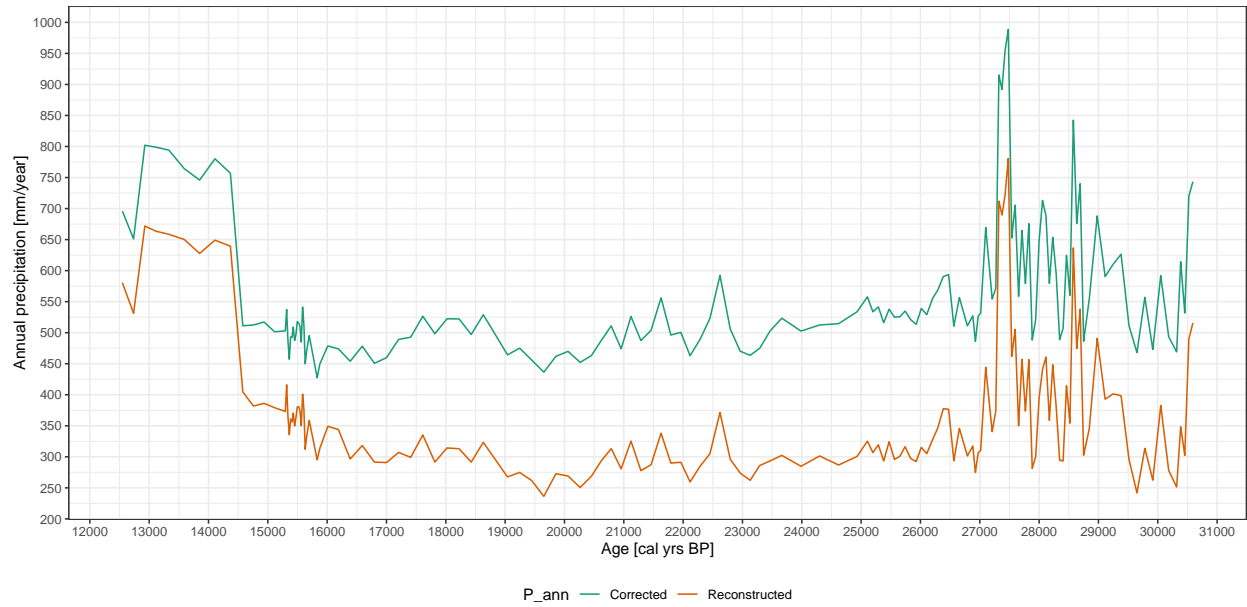


- age < 22k



Reconstructed vs corrected P_{ann}: Past CO₂ calculated using mean

With MI ratio



- age < 22k



Appendix

A1. Lago di Fimon Data

Download the CSV file: [fimon-with-corrected-mi.csv](#)

age_calBP	past_temp	past_co2	modern_co2	present_t	recon_mi	corr_mi	corr_P_ann
12548	3.4543590	247.095	311.765	3.4543590	0.6104173	0.7316454	695.9629
12737	3.2477475	244.445	311.765	3.2477475	0.5603200	0.6869662	651.1892
12927	3.0758030	238.485	311.765	3.0758030	0.7353834	0.8778865	802.0966
13116	3.9111540	238.190	311.765	3.9111540	0.7079373	0.8523638	798.8171
13331	4.3190895	236.860	311.765	4.3190895	0.7216559	0.8703531	794.2388
13590	6.1764505	243.860	311.765	6.1764505	0.7688588	0.9038530	764.4565
13850	4.6494470	238.515	311.765	4.6494470	0.7732308	0.9188861	745.9564
14109	6.8067195	234.640	311.765	6.8067195	0.7948950	0.9553984	780.1565
14369	5.5827470	239.360	311.765	5.5827470	0.7913471	0.9368191	756.9057
14578	-0.3982995	238.870	311.765	-0.3982995	0.5087981	0.6426420	511.1847
14757	0.0404540	227.900	311.765	0.0404540	0.4701792	0.6310859	512.4182
14936	0.3125450	228.680	311.765	0.3125450	0.4698498	0.6292391	517.2010
15115	0.1059080	232.070	311.765	0.1059080	0.4666316	0.6171397	501.4140
15295	-1.1583765	226.705	311.765	-1.1583765	0.4651172	0.6269644	503.0712
15317	-1.8770290	227.640	311.765	-1.8770290	0.5454642	0.7047383	537.4320
15339	-1.1472565	228.280	311.765	-1.1472565	0.4719894	0.6299595	487.4262
15362	-1.4772625	227.155	311.765	-1.4772625	0.4419405	0.6018464	457.1635
15384	-0.7098055	225.065	311.765	-0.7098055	0.4556153	0.6223141	493.0425
15407	-0.0868540	225.065	311.765	-0.0868540	0.4382268	0.6058159	492.4321
15429	0.0490380	224.005	311.765	0.0490380	0.4567170	0.6275584	508.9822
15451	-0.1665385	224.005	311.765	-0.1665385	0.4322369	0.6023703	487.3973
15474	-2.9020175	223.270	311.765	-2.9020175	0.4554099	0.6230408	496.9276
15496	-1.2708035	223.400	311.765	-1.2708035	0.4693971	0.6396082	517.8583
15518	-2.5215290	223.400	311.765	-2.5215290	0.4751379	0.6433018	515.8373
15541	-1.8592585	223.400	311.765	-1.8592585	0.4672453	0.6364154	510.8444
15563	-0.9796895	223.145	311.765	-0.9796895	0.4428890	0.6139413	485.0551
15586	-0.9198930	223.145	311.765	-0.9198930	0.4908755	0.6626483	541.2080
15608	-1.1049475	223.145	311.765	-1.1049475	0.4745624	0.6457971	512.4876
15630	-1.7474020	222.760	311.765	-1.7474020	0.3846061	0.5545762	449.9255
15653	-2.8287755	222.460	311.765	-2.8287755	0.4059562	0.5751614	469.8484
15698	-0.7838195	222.460	311.765	-0.7838195	0.4550534	0.6284127	495.3125

age_calBP	past_temp	past_co2	modern_co2	present_t	recon_mi	corr_mi	corr_P_ann
15832	-2.4822590	223.610	311.765	-2.4822590	0.3715463	0.5379401	427.2677
15877	-2.9935005	222.935	311.765	-2.9935005	0.3866602	0.5541385	449.7177
16011	-3.4189090	223.400	311.765	-3.4189090	0.4485396	0.6149310	478.6675
16190	-3.5535505	224.405	311.765	-3.5535505	0.4325579	0.5959996	473.8749
16388	-4.2557505	210.360	311.765	-4.2557505	0.3743157	0.5730325	454.0136
16592	-4.5139050	208.460	311.765	-4.5139050	0.4056510	0.6097144	478.2213
16796	-5.0007760	207.890	311.765	-5.0007760	0.3742106	0.5785105	450.6890
17000	-5.0019635	204.320	311.765	-5.0019635	0.3690658	0.5835454	459.7303
17204	-4.5986605	198.460	311.765	-4.5986605	0.3934976	0.6268030	489.1720
17408	-5.1342340	192.455	311.765	-5.1342340	0.3879071	0.6389419	492.7450
17612	-2.8987480	195.790	311.765	-2.8987480	0.4312829	0.6775687	526.5152
17816	-4.3622580	189.230	311.765	-4.3622580	0.3711237	0.6343017	498.2866
18020	-3.2700620	188.375	311.765	-3.2700620	0.4069588	0.6765336	522.4657
18224	-3.7287540	187.265	311.765	-3.7287540	0.4074088	0.6796168	522.1660
18428	-3.8150300	187.960	311.765	-3.8150300	0.3816363	0.6507066	497.0489
18632	-2.7300415	191.235	311.765	-2.7300415	0.4109214	0.6722595	528.9633
19040	-4.5008155	191.900	311.765	-4.5008155	0.3446474	0.5981272	464.3496
19244	-4.7703160	191.335	311.765	-4.7703160	0.3499654	0.6047666	475.0488
19448	-4.2797980	190.235	311.765	-4.2797980	0.3497317	0.6093287	455.9240
19652	-3.8080610	191.420	311.765	-3.8080610	0.3022315	0.5581295	436.4242
19856	-3.0914595	194.830	311.765	-3.0914595	0.3569768	0.6045207	461.9168
20060	-4.0014995	192.095	311.765	-4.0014995	0.3402560	0.5941970	469.9050
20264	-3.6568660	190.230	311.765	-3.6568660	0.3238047	0.5844448	452.1508
20454	-2.9629420	191.960	311.765	-2.9629420	0.3555843	0.6128235	463.2073
20621	-3.6192330	190.845	311.765	-3.6192330	0.3936621	0.6537071	487.6352
20788	-3.0643150	190.210	311.765	-3.0643150	0.4183326	0.6824110	510.9320
20955	-3.8962355	190.870	311.765	-3.8962355	0.3756592	0.6345843	474.1031
21121	-3.0382600	189.225	311.765	-3.0382600	0.4338236	0.7016342	526.1574
21288	-4.4332295	188.645	311.765	-4.4332295	0.3503193	0.6148800	487.3924
21459	-3.2158925	186.235	311.765	-3.2158925	0.3666595	0.6429712	503.7209
21628	-2.8200660	186.595	311.765	-2.8200660	0.4297748	0.7072177	556.2333
21793	-3.8564580	189.370	311.765	-3.8564580	0.3710240	0.6349839	496.2011
21961	-2.8964260	189.080	311.765	-2.8964260	0.3720975	0.6395389	500.6166
22117	-2.6988970	189.325	311.765	-2.6988970	0.3403084	0.6067998	462.9080

age_calBP	past_temp	past_co2	modern_co2	present_t	recon_mi	corr_mi	corr_P_ann
22286	-3.9362820	189.245	311.765	-3.9362820	0.3678182	0.6319361	489.4672
22451	-3.9181155	185.850	311.765	-3.9181155	0.3863056	0.6624968	522.9132
22621	-2.2218405	186.850	311.765	-2.2218405	0.4695378	0.7485855	592.1890
22794	-3.5156015	188.070	311.765	-3.5156015	0.3802290	0.6496678	505.9850
22962	-3.8705980	189.400	311.765	-3.8705980	0.3679825	0.6317453	470.1411
23129	-2.8999535	189.340	311.765	-2.8999535	0.3461524	0.6121778	463.5334
23291	-2.7144835	195.600	311.765	-2.7144835	0.3728354	0.6191027	474.8942
23463	-3.1932855	186.780	311.765	-3.1932855	0.3854142	0.6602725	502.4617
23663	-2.5689080	185.560	311.765	-2.5689080	0.3843895	0.6652396	523.3253
23987	-4.8966395	183.905	311.765	-4.8966395	0.3659864	0.6460216	502.5951
24300	-4.8466455	186.730	311.765	-4.8466455	0.3867717	0.6575570	512.4121
24620	-5.0813930	183.650	311.765	-5.0813930	0.3529370	0.6331204	514.5144
24931	-5.0754660	180.630	311.765	-5.0754660	0.3759896	0.6674585	533.6643
25106	-3.3611825	180.690	311.765	-3.3611825	0.4148334	0.7117092	557.8164
25198	-4.8038880	181.675	311.765	-4.8038880	0.3907004	0.6794391	533.6434
25290	-3.2027940	181.675	311.765	-3.2027940	0.4221757	0.7160465	541.6045
25380	-3.2212890	183.020	311.765	-3.2212890	0.3796770	0.6676720	516.1500
25472	-4.5002665	183.020	311.765	-4.5002665	0.4338403	0.7194921	537.8415
25561	-4.7428835	183.380	311.765	-4.7428835	0.3639550	0.6461958	525.0713
25654	-4.9071850	184.960	311.765	-4.9071850	0.3700087	0.6464116	525.7011
25741	-4.2805350	184.960	311.765	-4.2805350	0.4037598	0.6824795	534.8880
25834	-4.8294670	185.530	311.765	-4.8294670	0.3646720	0.6391819	521.0875
25928	-4.9830185	185.530	311.765	-4.9830185	0.3628614	0.6369486	513.4376
26014	-4.7375660	185.530	311.765	-4.7375660	0.3878914	0.6631136	538.9981
26106	-4.8801765	184.545	311.765	-4.8801765	0.3790444	0.6571522	529.0180
26204	-4.4064455	184.570	311.765	-4.4064455	0.4025573	0.6822933	555.1936
26292	-3.6311090	184.170	311.765	-3.6311090	0.4431722	0.7272611	568.5751
26385	-3.6190970	184.890	311.765	-3.6190970	0.5014990	0.7842912	590.4338
26474	-2.6933415	185.760	311.765	-2.6933415	0.4896647	0.7716731	593.5741
26563	-2.6299845	185.510	311.765	-2.6299845	0.3801492	0.6609149	510.4718
26656	-3.0495910	185.475	311.765	-3.0495910	0.4618198	0.7432584	556.6303
26791	-2.7536620	185.935	311.765	-2.7536620	0.4019588	0.6813317	511.0357
26882	-3.0126660	187.255	311.765	-3.0126660	0.4152275	0.6895328	527.1295
26926	-2.6242760	187.255	311.765	-2.6242760	0.3564121	0.6305655	486.0407

age_calBP	past_temp	past_co2	modern_co2	present_t	recon_mi	corr_mi	corr_P_ann
26973	-1.7724525	187.735	311.765	-1.7724525	0.3836743	0.6591000	526.8310
27015	-2.4210435	187.735	311.765	-2.4210435	0.3831848	0.6567774	531.4822
27100	-0.9767355	186.270	311.765	-0.9767355	0.5658541	0.8527005	669.5673
27209	-2.3474330	192.495	311.765	-2.3474330	0.4112296	0.6693431	554.2943
27270	-1.7595705	192.495	311.765	-1.7595705	0.4946910	0.7559851	571.7113
27322	-0.4860075	191.005	311.765	-0.4860075	0.9801671	1.2599819	915.1888
27374	-0.2789945	191.005	311.765	-0.2789945	0.9541025	1.2340200	892.0149
27426	2.9092085	191.950	311.765	2.9092085	0.8856040	1.1711915	954.5096
27480	-0.4224100	191.590	311.765	-0.4224100	1.0492718	1.3285602	988.5136
27538	-1.7689160	191.380	311.765	-1.7689160	0.6474583	0.9155522	652.7753
27596	-0.6996720	191.950	311.765	-0.6996720	0.6810894	0.9509051	705.5564
27654	-1.4072305	191.460	311.765	-1.4072305	0.4442326	0.7090183	558.5467
27711	-0.8768735	190.610	311.765	-0.8768735	0.5994570	0.8718036	664.7278
27769	-1.4738645	188.445	311.765	-1.4738645	0.5024990	0.7787406	579.3110
27827	-0.8969075	189.085	311.765	-0.8969075	0.5776934	0.8549152	675.5827
27884	-2.6099145	189.930	311.765	-2.6099145	0.3602705	0.6253374	488.1501
27942	-3.0141700	189.140	311.765	-3.0141700	0.3630040	0.6297476	521.1847
28000	-0.2045500	189.290	311.765	-0.2045500	0.4296742	0.7052016	648.6697
28057	1.0222825	189.625	311.765	1.0222825	0.4508800	0.7295058	713.1331
28115	-0.7785990	190.890	311.765	-0.7785990	0.5464824	0.8170671	688.8797
28173	-2.2936860	190.890	311.765	-2.2936860	0.4296046	0.6936273	579.4507
28230	-0.8986915	191.705	311.765	-0.8986915	0.5852610	0.8534430	653.6544
28288	-1.3901855	191.590	311.765	-1.3901855	0.4718032	0.7367380	594.3376
28346	-2.9150045	192.630	311.765	-2.9150045	0.3877601	0.6435182	488.7741
28404	-2.5274735	189.160	311.765	-2.5274735	0.3682637	0.6363392	506.9564
28461	-0.6803795	189.650	311.765	-0.6803795	0.5435154	0.8186791	624.4172
28519	-2.6493435	191.375	311.765	-2.6493435	0.4501274	0.7119726	560.2880
28577	-0.1082745	193.100	311.765	-0.1082745	0.8373257	1.1079552	842.3651
28634	-1.0202060	192.820	311.765	-1.0202060	0.6235308	0.8882780	675.8903
28692	-1.2563220	193.310	311.765	-1.2563220	0.7029885	0.9669492	739.9343
28750	-2.8849375	193.845	311.765	-2.8849375	0.4158887	0.6682525	486.2345
28845	-0.2543550	193.290	311.765	-0.2543550	0.4318487	0.6934085	554.0907
28979	-1.0402735	193.065	311.765	-1.0402735	0.6586987	0.9232378	688.1600
29113	-1.9789660	192.260	311.765	-1.9789660	0.5211087	0.7831249	590.4011

age_calBP	past_temp	past_co2	modern_co2	present_t	recon_mi	corr_mi	corr_P_ann
29247	-1.9357440	190.245	311.765	-1.9357440	0.5171989	0.7861503	610.1462
29381	0.7651485	189.520	311.765	0.7651485	0.4878861	0.7668293	626.4464
29515	-2.2654870	189.225	311.765	-2.2654870	0.3685841	0.6371530	511.0403
29649	-4.0925480	189.505	311.765	-4.0925480	0.2794845	0.5405965	467.9985
29782	-2.0912940	191.125	311.765	-2.0912940	0.3377912	0.5997476	556.8789
29916	-3.8101260	191.175	311.765	-3.8101260	0.3202582	0.5773079	473.0136
30050	-3.7933055	189.910	311.765	-3.7933055	0.4837099	0.7482369	592.0225
30184	-4.1018525	188.480	311.765	-4.1018525	0.3432502	0.6090504	493.4303
30318	-3.1774825	185.990	311.765	-3.1774825	0.3187872	0.5950648	469.1653
30386	-1.4530020	185.145	311.765	-1.4530020	0.3738220	0.6591857	614.3262
30455	-2.1762370	183.620	311.765	-2.1762370	0.3811901	0.6700705	531.7234
30524	-0.4524055	183.620	311.765	-0.4524055	0.6385906	0.9385098	720.1095
30592	-0.6434550	185.040	311.765	-0.6434550	0.6667504	0.9613462	743.3587