

Phytosociological Research Center

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Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 30/08/2017)

SAO SIMAO (BRAZIL)

Altitude: 617 m.

Latitude: 21°29'S Longitude: 47°33'W

Temperature observation period.: 1919-8 (-1910 r)

Rainfall observation period....: 1978-1989 (12)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	EPi
Jan.	23.80	29.80	19.70	36.40	14.30	246.0	119.61
Feb.	24.00	30.60	19.70	35.40	15.40	173.0	106.17
Mar.	23.50	30.30	18.70	35.00	11.30	155.0	105.86
Apr.	22.10	29.00	17.30	33.10	10.60	84.0	84.09
May.	19.60	27.00	14.30	32.00	1.50	77.0	61.30
Jun.	17.60	25.90	11.60	31.20	-0.60	31.0	45.07
Jul.	17.80	26.30	11.40	32.00	0.40	28.0	47.86
Aug.	20.10	28.40	13.20	35.40	1.40	28.0	68.65
Sep.	21.50	29.00	15.60	38.10	7.00	69.0	81.01
Oct.	23.10	30.50	17.40	38.20	10.40	128.0	105.35
Nov.	23.60	30.30	18.60	32.10	10.20	183.0	111.04
Dec.	23.60	29.40	19.40	36.10	13.50	265.0	117.16
Year	21.69	28.87	16.41	34.58	7.95	1467	1053.2

BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	592
Compensated thermicity index.....(Itc):	592
Simple continentality index.....(Ic):	6.4
Diurnality index.....(Id):	15.2
Annual ombrothermic index.....(Io):	5.64
Monthly dry ombrothermic index.....(Iod1):	1.57
Bimonthly dry ombrothermic index.....(Iod2):	1.48
Three monthly dry ombrothermic index.....(Iod3):	1.57
Four monthly dry ombrothermic index.....(Iod4):	2.18
Annual ombro-evaporation index.....(Ioe):	3.63
Annual positive temperature.....(Tp):	2603
Annual negative temperature.....(Tn):	0
Dry station temperature.....(Td):	555
Positive precipitation.....(Pp):	1467

N. of	P>4T	P:2T-4T	PT-2T	P<T	T<0
Months	6	3	3	0	0

Latitudinal Belt...: Eutropical

Continentality.....: Hyperoceanic - Low Euhyperoceanic

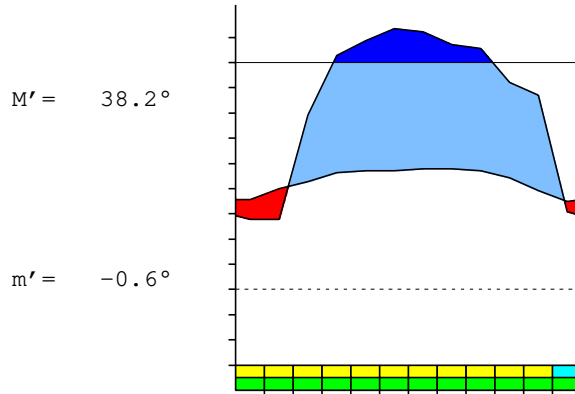
Bioclimate(Variant): TROPICAL PLUVISEASONAL (MESOPHYTIC)

Bioclimatic Belt...: LOW THERMOTROPICAL UPPER SUBHUMID

SAO SIMAO (BRAZIL)

617 m

P= 1467 21° 29'S 47° 33'W -1910/12 y.
 T= 21.7° Ic= 6.4 Tp= 2603 Tn= 0
 m= 11.6° M= 25.9° Itc= 592 Io= 5.6



TROPICAL PLUVISEASONAL (MESOPHYTIC)
 LOW THERMOTROPICAL UPPER SUBHUMID

WATER INDEX CARD

SAO SIMAO (BRAZIL)

Altitude: 617 m.

Latitude: 21° 29'S

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jul.	17.8	48	28	-20	66	48	0	0	6	-0.4
Aug.	20.1	69	28	-41	25	69	0	0	3	-0.5
Sep.	21.5	81	69	-12	13	81	0	0	2	-0.1
Oct.	23.1	105	128	23	36	105	0	0	1	0.2
Nov.	23.6	111	183	64	100	111	0	8	4	0.6
Dec.	23.6	117	265	0	100	117	0	148	76	1.2
Jan.	23.8	120	246	0	100	120	0	126	101	1.0
Feb.	24.0	106	173	0	100	106	0	67	84	0.6
Mar.	23.5	106	155	0	100	106	0	49	67	0.4
Apr.	22.1	84	84	0	100	84	0	0	33	0.0
May.	19.6	61	77	0	100	61	0	16	24	0.2
Jun.	17.6	45	31	-14	86	45	0	0	12	-0.3
Year	21.7	1053	1467	*	*	1053	0	414	414	*

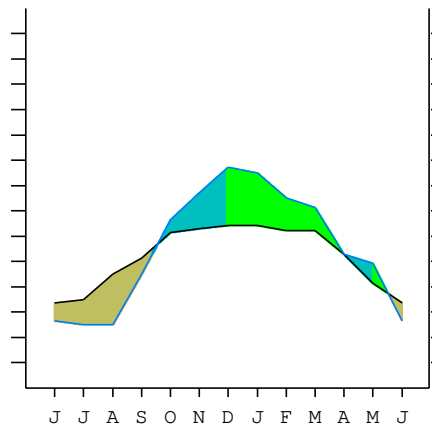
R = Reserve VR = Variation of the reserve RE = Real evapotranspiration
 DR = Drainage HC = Humidity coefficient DF = Deficit SP = Superavit

SAO SIMAO (BRAZIL)

21°29'S 47°33'W 617 m -1910/12 y.

T= 21.7 Ic= 6.4 TROPICAL PLUVISEASONAL (MESOPHYTIC)
 m= 11.6 Tp= 2603 LOW THERMOTROPICAL
 M= 25.9 Tn= 0 UPPER SUBHUMID
 M' = 38.2 Itc= 592
 m' = -0.6 Io= 5.6
 P= 1467 mm ———
 PE= 1053 mm ———

Imbibing	1 Apr.
Saturation	1 May.
Reserve Use	16 May.
Deficit	



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SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continental Index [A2b]
 + Type: A. Hyperoceanic
 + Subtype: 2. Euhyperoceanic
 + Variant: b. Low

Thermic types [A2.A2]
 + Latitudinal zone: A. Warm
 + Latitudinal belt: 2. Eutropical
 + Thermic type: A. Warm
 + Thermic subtype: 2. Warm

Bioclimatic types [A4.2b.6a]
 + Macrobioclimate: A. TROPICAL
 + Bioclimate: 4. PLUVISEASONAL
 + Bioclimatic variant ..:
 + Thermic type.....: 2. THERMOTROPICAL
 + Thermic subtype.....: b. LOW
 + Ombrothermic type ...: 6. SUBHUMID
 + Ombrothermic subtype : a. UPPER

Bioclimatic Classification: Trde.Ttr.Shu

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 1150
 Coldest semester of the year.....(Psw): 317
 Warmest four months period of the year.....(Pcm1): 867
 Following warmest four months period.....(Pcm2): 347
 Positive precipitation dryest 3 months.....(Ppd): 87
 Positive precipitation dryest 2 months.....(Ppd2): 56
 Positive precipitation dryest 1 month.....(Ppd1): 28
 Positive precipitation warmest 3 months.....(Pps): 684
 Positive precipitation warmest 2 months.....(Pps2): 419
 Positive precipitation warmest 1 month.....(Pps1): 173
 Positive precipitation coldest 3 months.....(Ppw): 136
 Positive precipitation coldest 2 months.....(Ppw2): 59
 Positive precipitation coldest 1 month.....(Ppw1): 31

Seasons	Jun+Jul+Aug Ttr3-3	Sep+Oct+Nov Ttr4-4	Dec+Jan+Feb Ttr1-1	Mar+Apr+May Ttr2-2
Rainfall	87	380	684	316

Tropical rainfall rhythms: 1 > 4 > 2 > 3

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 24.0
 Average coldest month [T].....(Tmin): 17.6
 Maximum temp. warmest month [M].....(Tmmax): 30.6
 Minimum temp. coldest month [m].....(Tmmin): 11.4
 Absolute Max.temp. warmest month [M'].....(Tamax): 38.2
 Absolute Min.temp. coldest month [m'].....(Tamin): -0.6
 First warmest contrasted month [M].....(Tcmax): 28.4 (8)
 First coldest contrasted month [m].....(Tcmin): 13.2 (8)
 Dry station temperature.....(Td): 555
 Positive temperature dryest 3 months.....(Tpd): 555
 Positive temperature dryest 2 months.....(Tpd2): 379
 Positive temperature dryest 1 month.....(Tpd1): 178
 Positive temperature warmest 3 months.....(Tps): 714
 Positive temperature warmest 2 months.....(Tps2): 478
 Positive temperature warmest 1 month.....(Tps1): 240
 Positive temperature coldest 3 months.....(Tpw): 550
 Positive temperature coldest 2 months.....(Tpw2): 354
 Positive temperature coldest 1 month.....(Tpw1): 176

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SEASONAL PARAMETERS

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Warmest semester...(Sms)	o	o	o							o	o	o
Dryest semester....(Smd)				o	o	o	o	o	o			
Warmest 4 months...(Cm1)	o	o									o	o
Dryest 4 months....(Cmd)						o	o	o	o			
Vegetation Activity(Pav)	o	o	o	o	o	o	o	o	o	o	o	o
Ultragelid...[M' <=0] (Pf)												
Hypergelid...[M <=0] (Pf)												
Gelid.....[T <=0] (Pf)												
Subgelid.....[m <=0] (Pf)												
Pregelid.....[m' <=0] (Pf)						o						
Agelid.....[m' > 0] (Pf)	o	o	o	o	o		o	o	o	o	o	o
HiperAgelid..[all>0] (Pf)	o	o	o	o	o		o	o	o	o	o	o

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OMBROTHERMIC PARAMETERS

Annual aridity index.[PE/P].....(Iar): 0.72
 Mediterranean index of January.....(Im1): No
 Mediterranean index of January & February.....(Im2): No
 Mediterranean index of December to February...(Im3): No

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	2650	2460	1730	1550	840	770	310	280	280	690	1280	1830
Tp	236	238	240	235	221	196	176	178	201	215	231	236
Io (Iom)	11.2	10.3	7.21	6.60	3.80	3.93	1.76	1.57	1.39	3.21	5.54	7.75
Seasons	Dec+Jan+Feb			Mar+Apr+May			Jun+Jul+Aug			Sep+Oct+Nov		
Pp(x10)/Tp	6840 / 714			3160 / 652			870 / 555			3800 / 682		
Io (Iot)	9.580			4.847			1.568			5.572		
Semesters	December-May						June-November					
Pp(x10)/Tp	10000 / 1366						4670 / 1237					
Io (Iosm)	7.321						3.775					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 14670/2603=5.64 **There is No Yearly Aridity**

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	2650	2460	1730	1550	840	770	310	280	280	690	1280	1830
Tp [T*10]	236	238	240	235	221	196	176	178	201	215	231	236
Iom [Pp/Tp]	\$\$	\$\$	721	660	380	393	176	157	139	321	554	775
Avm [200-Iom]	***	***	***	***	***	***	24	43	61	***	***	***
Seasons	Dec+Jan+Feb			Mar+Apr+May			Jun+Jul+Aug			Sep+Oct+Nov		
Pp / Tp	6840 / 714			3160 / 652			870 / 555			3800 / 682		
Iot [Pp/Tp]	958			485			157			557		
Avs E[Avm<200]	***			***			127			***		
Weak lower semiarid [1]							Strong upper semiarid [2]					
Weak upper semiarid [1]												

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin](Sp): 6.40
 CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4]: 9.31
 CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14]: 6.83
 + Hyperoceanic (-20<CI<20)
 CI of Currey (1974) [CI=Sp/(1+Lat/3)]: 0.78
 + Oceanic (0.6<CI<1.1)
 Rainfall Index of Lang (1925) [R=P/T]: 67.63
 + Temperate warm (100>R>60)
 Aridity Index of Martonne (1926) [Ia=P/(T+10)]: 46.29
 + Humid (60>Ia>30)
 I of Emberger (1930) [Q=100*P/(Tmax²-Tmin²)]: 181.92
 + Humid (Q>90)
 I of Dantin & Revenga (1940) [DR=100*T/P]: 1.48
 + Humid (2>DR>0)
 Aridity Index of UNEP [I=P/PE]: 1.39
 + Humid (I>0.65)
 Potential Erosion I of Fournier (1960) [K=Pi²/P].....: 47.87
 + Very low (K<60)

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BIOCLIMATIC INDICES II

Bioclimatic classification of Gaussen & Bagnouls (1957)
 + Climate: A. Warm and temperate warm
 + Region: 3. Termoxeroteric (Mediterranean warm)
 + Thermic type: 2. Macrothermic

Thornthwaite (1948)												
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
P-E ratio	1.03	0.69	0.62	0.33	0.31	0.12	0.11	0.10	0.27	0.51	0.75	1.13
T-E ratio	10.71	10.80	10.57	9.95	8.82	7.92	8.01	9.05	9.67	10.40	10.62	10.62
Precipitation-effectiveness:	59.62					Temperature-efficiency: 117.14						
Moisture Index [MI=100*(P-PE)/PE]: 39.29 + B1.Humid low-humid (20<MI<40)												
Index of dryness [DI=100*d/PE]: 0.00 + No deficit (0<DI<16.7)												
Index of humidity [HI=100*s/PE]: 39.29 + Strong surplus (20<HI)												
Potential Evapotranspiration PE: 1053.18 + Forth mesothermic (997<PE<1440)												

