Appendix: MexicoCSMN Input Type

2002-11-26, Acrobat Distiller

Overview

The MexicoCSMN time series input type corresponds to the Mexico Coordinación Servicio Meteorologico Nacional (CSMN) format. Data in this format are available on CD and were extracted from the larger *Clicom* database. Note that the *Eric* data and software that are sometimes used also originate from *Clicom.* The primary difference is that the CSMN data are typically more current than any distribution of *Eric*. The CSMN CD files consist of a fixed format catalog file (*CATALOGO.txt*) listing stations and comma separated value files for each state/data type combination (*SSS_DDD.CSV*, where SSS is the state abbreviation and DDD is the data type abbreviation) containing the actual daily time series. It appears that the `ELEMENT-CODE` value in the time series files corresponds to the data type abbreviations used in the file names, as follows:

ELEMENT-CODE	Data Type	Description
005	PP	Point precipitation total.
018	EV	Evaporation total.

Drawing from the above examples, it can be concluded that other data types are available from CSMN.

The following example illustrates the format of a *CATALOGO.txt* file. The first five digits of a station identifier identify the state. The abbreviation for the corresponding state is then used to determine the data file containing the time series data.

```
================================================================================================
 Station-         STN-NAME            DRAINAGE-BASIN    LAT- LAT- LAT- LON- LON- LON- ELEVATI
    ID                                                   DEGR MINU SECO DEGR MINU SECO   ON
                                                         EES  TES  NDS  EES  TES  NDS
------------------------------------------------------------------------------------------------
 00001001 AGUASCALIENTES, AGS.     LERMA SANTIAGO       21   52   00   102  18   00   1,908.0
 00001003 CALVILLO, CALVILLO       LERMA SANTIAGO       21   53   00   102  43   00   1,702.0
 00001004 CAÑADA, HONDA, AGS.      LERMA SANTIAGO       22   00   00   102  11   00   1,185.0
 00001005 EL NIAGARA, AGS.         LERMA SANTIAGO       21   48   00   102  22   00   1,805.0
 00001006 EL TULE, ASIENTOS        LERMA SANTIAGO       22   05   00   102  06   00   1,970.0
 00001007 JESUS MARIA, JESUS MARIA LERMA SANTIAGO       21   57   00   102  21   00   1,800.0
 00001008 P.LA CONCEPCION TEPEZALA LERMA SANTIAGO       22   12   00   102  08   30   2,260.0
 00001009 LA LABOR, CALVILLO       LERMA SANTIAGO       21   58   00   102  42   00   1,600.0
 00001010 LA TINAJA, SAN JOSE DE G LERMA SANTIAGO       22   13   00   102  34   00   2,425.0
 00001011 MALPASO, CALVILLO        LERMA SANTIAGO       21   51   00   102  40   00   1,775.0
…
```

Example CATALOGO.txt File

The following table provides the relationship between state numbers and abbreviations.

State Number	State Abbreviation	State Name
1	AGS	AGUASCALIENTES
2	BC	BAJA CALIFORNIA
3	BCS	BAJA CALIFORNIA SUR
4	CAMP	CAMPECHE
5	COAH	COAHUILA
6	COL	COLIMA
7	CHIS	CHIAPAS
8	CHIH	CHIHUAHUA
9	DF	DISTRITO FEDERAL
10	DGO	DURANGO
11	GTO	GUANAJUATO
12	GRO	GUERRERO
13	HGO	HIDALGO
14	JAL	JALISCO
15	MEX	MEXICO
16	MICH	MICHOACAN
17	MOR	MORELOS
18	NAY	NAYARIT
19	NL	NUEVO LEON
20	OAX	OAXACA
21	PUE	PUEBLA
22	QRO	QUERETARO
23	QROO	QUINTANA ROO
24	SLP	SAN LUIS POTOSI
25	SIN	SINALOA
26	SON	SONORA
27	TAB	TABASCO
28	TAMPS	TAMAULIPAS
29	TLAX	TLAXCALA
30	VER	VERACRUZ
31	YUC	YUCATAN
32	ZAC	ZACATECAS

The following example illustrates the format of a *SSS_DD.CSV* time series data file, which contains time series data for the stations in a state, for a particular data type. The lines in the example wrap.

```
Station-ID,ELEMENT-CODE,YEAR-MONTH,VALUE-1,VALUE-2,VALUE-3,VALUE-4,VALUE-5,VALUE-6,VALUE-7,VALUE-8,VALUE-
9,VALUE-10,VALUE-11,VALUE-12,VALUE-13,VALUE-14,VALUE-15,VALUE-16,VALUE-17,VALUE-18,VALUE-19,VALUE-20,VALUE-
21,VALUE-22,VALUE-23,VALUE-24,VALUE-25,VALUE-26,VALUE-27,VALUE-28,VALUE-29,VALUE-30,VALUE-31
00001001,005,1980-07,0,0,0,0,5.4,0,0,0,0,0,4.5,0,0,0,0,0,0,0,9,9.4,19,0,10,28,0.5,0,2.2,0.3,13,0.5,0
00001001,005,1980-10,0,0,0,0,0,0,0,0,0,0,6.8,3,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0.2,0,9.5,12.5,16.3,8
00001003,005,1932-01,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
00001003,005,1932-08,8.3,0,0,0,0,0,10.7,8.1,0,0,0,0,0,0,0,0,0,0,-99999,-99999,-99999,-99999,-99999,-99999,-
99999,-99999,-99999,-99999,-99999,-99999,-99999
00001003,005,1932-10,0,5,9.5,0.3,0,0,0,0,1.8,0.5,0,0,0,5,0,0,0,0,0,0,0,0,27,0,0,0,0,0,0,0,0
00001003,005,1932-11,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,-99999
00001003,005,1932-12,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
```

Example Time Series File with Name SSS_DDD.CSV (e.g., AGS_PP.CSV)

The file includes a header line that indicates the contents of each column. The columns are as follows:

1 Station identifier (matches the catalog file). First five characters are the state number.
2 Element code, equivalent to the data type.
3 Calendar month for data.
4 Data values for each day in the month. The value `-99999` is used to indicate missing data.

Each station in the catalog file can have zero or more records in the time series file. The records are grouped together and the dates in the records need not be sequential (gaps in the period are allowed). Time series in the file can have different periods of record.

MexicoCSMN Files and Standard Time Series Properties

The standard time series identifier for Mexico CSMN files is of the form:

```
Location.MexicoCSMN.DataType.Interval~MexicoCSMN~PathToFile
```

It is difficult to automatically assign standard time series properties from a Mexico CSMN file. The limited support of this file format assumes the following:

- The location part of the time series identifier is taken from the Station-ID, which is consistent in the catalog and time series files.
- The source part of the time series identifier is assigned as `MexicoCSMN`.
- The data type is assigned as `PP` or `EV`, based on the time series file that is read.
- The data interval is assigned as `1Day`.
- The units are assigned as `MM`.
- The missing data value is assigned to `-99999.0` (gaps in data records will result in this value).
- The description is set to the information in the catalog file.

Limitations

MexicoCSMN files have the following limitations:

- Riverside Technology, inc. is working to support the standard CSMN file format(s). Limited information is available for the file specifications. Currently only the PP and EV data file format has been tested.
- Additional specific limitations will be listed when file format specifications are fully determined.
- The period for the data is not available in the file header. Therefore the period is determined from the first and last dates in the data records. This introduces a slight performance penalty and prevents applications like TSTool from displaying the period in an optimized fashion.

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