

METHOD1.M

method1 computes an approximate version of "Method I", developed by Julius Shishkin in the 1950 at the US Census Bureau.

Note: I have not found a completely clear description of the algorithm, so the algorithm is not exactly the same as the original, since I had to guess some aspects. Also, the treatment at the edge of the sample is certainly different than the original.

Usage:

```
s = method1(data,period);
s = method1([dates,data],period);
s = method1(... ,type);
s = method1(... ,type,name);
```

s This is a structure containing the following components:

```
s.prog    = 'method1.m'
s.title   = name of series (if given)
s.period  = period
s.type    = type of decomposition
s.dates   = dates vector
s.dat     = data vector
s.tr      = trend
s.sa      = seasonally adjusted data
s.sf      = seasonal factor (cycle)
s.ir      = irregular component
.
.
.
```

The other components are from intermediate computation steps.

type

must be one of the following: 'additive', 'none', 'multiplicative', or 'logadditive'. It indicates the type of decomposition.

```
'additive' or 'none' : data = tr + sf + ir, sa = tr + ir.
'multiplicative' : data = tr * sf * ir, sa = tr * ir.
'logadditive' : log(data) = tr + sf + ir, sa = exp(tr + ir).
```

name is a string containing a descriptive title of the variable that is treated. This can be empty.

REMARK: This program uses several smaller programs (trendfilter, seasfilter, normalize_seas) that can be used to create a custom seasonal adjustment algorithm relatively easily. To understand how, just study the source code of this program.

NOTE: This file is part of the X-13 toolbox, but it is completely independent of the Census X-13 program. It is part of the 'seas' addition to the toolbox which allows to implement seasonal filters without using the Census Bureau programs.

The toolbox consists of the following programs, guix, x13, makespec, x13spec, x13series, x13composite, x13series.plot, x13composite.plot, x13series.seasbreaks, x13composite.seasbreaks, fixedseas, camplet, spr, InstallMissingCensusProgram, makedates, yqmd, TakeDayOff, EasterDate.

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If you use this software for your publications, please reference it as:
Yvan Lengwiler, 'X-13 Toolbox for Matlab, Version 1.50', Mathworks File Exchange, 2014-2021.

url: <https://ch.mathworks.com/matlabcentral/fileexchange/49120-x-13-toolbox-for-seasonal-filtering>