SOLAR MODULATION POTENTIAL UTILITIES 2.4

Description

The program is for scientific calculations of solar modulation potential based on monthly smoothed sunspot number time series.

Installation

```
mkdir ~/smp/
cd ~/smp
wget http://meteolab.ru/downloads/smp.zip
unzip smp.zip
rm smp.zip
sudo bash install.sh
```

Usage

```
python smp.py COMMAND [input_file_1 [input_file_2]] output_file
```

Command	Description	Example
`load-ri`	Load measured international sun spot numbers	`python smp.py load-ri rim.nc`
`load-phi`	Load measured SMP data	`python smp.py load-phi phim.nc`
`load-pwv`	Load measured PWV data	`python smp.py load-pwv pwvm.nc`
`load-pre`	Load measured precipitation data	`python smp.py load-pre prem.nc`
`merge-ri`	Merge measured and predicted sun spot numbers	`python smp.py merge-ri rim.nc rip.nc ri.nc`
`calc-ri`	Load predicted sun spot numbers	`python smp.py calc-ri rip.nc`
`calc-r12`	Calculate 12-month smoothed sun spot numbers	`python smp.py calc-r12 ri.nc r12.nc`
`calc-phi`	Calculate solar modulation potential	`python smp.py calc-phi r12.nc phip.nc`
`calc-pwv`	Calculate PWV data	`python smp.py calc-pwv phip.nc pwvp.nc`
`calc-pre`	Calculate precipitation data	`python smp.py calc-pre phip.nc prep.nc`
`calc-pre12`	Calculate 12-month smoothed precipitation data	`python smp.py calc-pre12 prem.nc pre12.nc`
`help`	Print manual information	`python smp.py help`
`version`	Print version information	`python smp.py version`

Example

For solar modulation potential, precipitable water vapor, and precipitation calculations use the bash script:

```
bash calc.sh
```

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