

第十一周 (Week 12) NCL 课后练习

提交时间: Week 13 上课前

命名方式: NCL.week12.学号.题目.ncl

1. The script “**week12.q1.template.ncl**” provides daily mean temperatures recorded at a weather station in January 2011. Complete the script as follows:
 - a. Calculate the time-averaged temperature in the following days
 - i. 1-10 Jan
 - ii. 11-20 Jan
 - iii. 21-31 Jan
 - b. Obtain the daily temperature change (变温) from 2 January to 30 January 2011 **WITHOUT do loops** (e.g. the daily temperature change on 2 January = temperature on 2 January minus temperature on 1 January)
 - c. Find the number of days that temperature was below 12.0 degree Celsius (**using NCL function(s)**)
2. Create an array representing all months from Jan 1950 to Dec 2018 **using the function “yyyymm_time”**, i.e. 195001, 195002, 195003, ..., 201810, 201811, 201812. Then, define an array to extract indices corresponding to June, July and August from 1971 to 2000 **using the function “get1Dindex”**, i.e. this array is assigned the index corresponding to 197106, 197107, 197108, 197206, 197207, 197208, ..., 200006, 200007, 200008.
Hint: You should extract separately the indices corresponding to June, July and August.
3. The script “**week12.q3.template.ncl**” specifies the year of 30 events. Define an array extracting indices corresponding to the events occurring in 1982, 1987, 1991, 1997 and 2015. The following values should be assigned to the array:

(0)	2
(1)	5
(2)	6
(3)	7
(4)	11
(5)	12
(6)	17
(7)	26
(8)	27

Hint: The simplest way is to use **the functions “get1Dindex” and “ismissing”**

4. Simplify the script “**week12.q4.template.ncl**” that obtains the mean momentum flux based on ua (zonal wind anomalies) and va (meridional wind anomalies).
Hint: Array operations recognize missing values if `_FillValue` in each array is defined.