Author: Ruyin Cao
School of Resources and Environment,
University of Electronic Science and Technology of China，
Email: cao.ruyin@uestc.edu.cn; caoruyin119@gmail.com

How to run the procedure of STSG?

The first version of STSG (STSG_v1) is written by the Interactive Data Language (IDL). STSG_v1 is a multi-processor computing procedure to realize parallel computing on a personal computer.

In the folder, there are two IDL code files, named as "STSG_main.pro" and "STSG_filter.pro". A copy of example data (an area of 100km × 100km) are also included to test STSG.

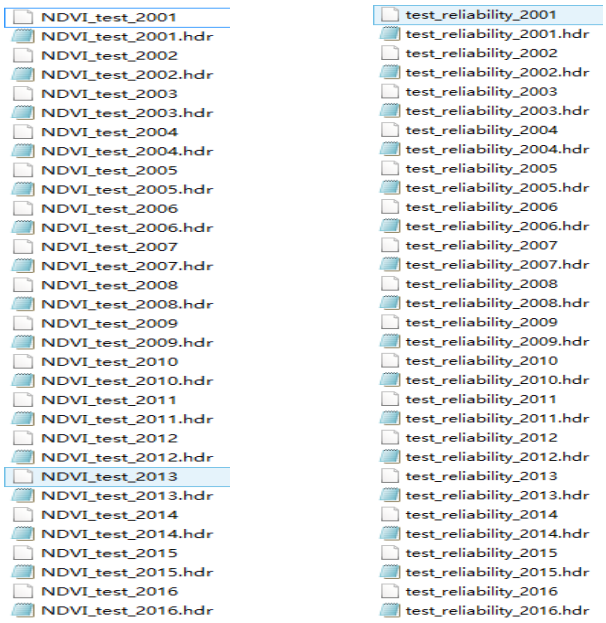
Run the main procedure "STSG_main.pro"

Input data:

```
; Input parameters
;*******************************************************************************
year = [2001,2002,2003,2004,2005,2006,2007,2008,2009,2010,2011,$
        2012,2013,2014,2015,2016]

; the thereshold of correlation coefficient to define similar pixels
sampcorr = 0.9

; half of the neighboring window size within which to search similar pixels
win = 10

; the path of the NDVI data
NDVI_filepath = 'D:\STSG_v1\test data 2\NDVI images\NDVI_test_'

; the path of the NDVI quality flags (realibility)
reliability_filepath = 'D:\STSG_v1\test data 2\reliability\test_reliability_'

; STSG performs by lines to prevent out of memory. This paramenter is set $
; to determine how many lines are processed by each cup core at a time.
; For this case, if the computer have 16 cpu cores, 48 lines (i.e. 16*3) are processed in parallel
cpucore_line = 3

; snow_address indicates whether to deal with snow contamianted NDVI values (1=yes/0=no)
snow_address = 1
;*******************************************************************************
```

Noted: To run STSG, NDVI data and reliability data are necessary. Both datasets should be organized as one file a year and they should be named as "×××_year" (see the following example).

One Key Point: there must be not spaces for the path of the source codes ("STSG_main.pro", "STSG_filter.pro").



NDVI values are multiplied by 10000 and they are saved as the data type of integer with a dynamic range of [-10000, 10000]. The original NDVI data don't need any further preprocessing such as linear interpolations. Background value in NDVI images is 0. For reliable data, values of clear, uncertainty, snow and cloud pixels are set to be 0, 1, 2 and 3, respectively.

The STSG-processed NDVI time-series data are saved in the same folder of original NDVI data.