Instruction guide:

**What materials do we provide?**

According to the computer code guide-for-authors of Computer & Geoscience, we provided the following six materials:

**1. Readme.txt**

This file provides the name of our program, the title of our manuscript along with the author details.

**2. Instruction-guide.docx**

This file provides the information on what materials do we provide and how to use the program.

**3. Source codes**

We provide our original codes in this part. The source codes are clear design and can be reproducible, reusable, extensible and maintainable. Please see the section of “How to use the source codes?” for detail information.

**4. Executable program (App test)**

To make it easier for experts to use our program, we provide an executable program. Experts can choose to use either source codes or executable program.

**5. Test data**

We provide a test dataset to assure that the program is working correctly.

**6. Output files**

We provide the output files to allow a user to check if a compiled program is working properly. The output files contain the intermediate and final execution results of the program.

**How to use the source codes?**

The source codes contain two parts, one is the core C++ codes for our partitioned dissolution method, the other is basic support libraries. The users can compile source codes directly through Microsoft Visual Studio via ‘PartitionedDissolution.sln’.

The core codes consists of three parts:

1. Mission codes.

This part is used to write the upper executable functions.

2. Datasource codes.

The part contains two classed, one is ‘DataBoundarySplitSeam.cpp/.h’, which is used to parallel processed each patch sub-datasets; the other is ‘PolygonSplitAggregation.cpp/.h’, which is used to reconciliation for different sub-datasets.

3. Source codes.

This part is used to write the bottom functions, which will be called by the Datasource codes.

**How to use the executable program?**

1. The program function module involved in this paper is in the folder app\_test, and the provided sample data is in the folder data\_test. The test configuration file is test.xml.

2. The program is supported in the environment of WINDOWS 7 and above in x64. The program runs as: Open the cmd command prompt for WINDOWS, then drag the MapBatchProcessing.exe of the fodder app\_test in, and meanwhile press the Space key, and then drag the configuration file test.xml, and press Enter key to run the program. For example: D:\paper\_test\app\_test\MapBatchProcessing.exe D:\paper\_test\test2.xml

3. Some instructions about the sample data (in the fodder data\_test): narrow\_merge is the narrow pattern spot and no\_narrow\_merge is the non-narrow pattern spot, which both can constitute a complete overlay data.

4.Some instructions about the configuration file test.xml: in the first paragraph, the Mission id="20" "70" "130" is mainly to pre-process the pattern spot data and prepare the data well; in the second paragraph, the Mission id="132" "110" "135" is to combine the pattern blocks, in which Mission id="132" is to cut the pattern spot data into grids; Mission id="110" is to dissolute the grids; Mission id="135" is to stitch the results of the dissolution processing.

5. If you need to modify the key parameters in the configuration file test.xml, such as the grid block size, when “3×3” is changed to “5×5”, it can refer to the following steps: change the label <GridSize note="格网裁剪大小">3, 3</GridSize> in Mission id="132" to <GridSize note="格网裁剪大小">5,5</GridSize>; then change correspondingly the label in Mission id="110" to <MissionWhileNum note="循环执行次数">25</MissionWhileNum> and the label in Mission id="132" to <SeamLayerNum note="缝合图层数量">25</SeamLayerNum>.

6. If you need to check the intermediate process result data of the program, the cutting result of Mission id="132" is no\_narrow\_merge(number).shp and narrow\_merge(number).shp, in which number refers to the amount of grid blocks. The processing result of Mission id="110" is narrow\_clip\_split(number).shp. The final processing result of Mission id="132" is narrow\_clip\_split\_merge\_result.shp.

**Please feel free to contact us at any time.**