Instruction guide:

**What materials do we provide?**

According to the computer code guide-for-authors of Computer & Geoscience, we provided the following five 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. Test data**

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

**5. 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 final execution results of the program.

**How to use the source codes?**

1. 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 program is supported in the environment of WINDOWS 7 and above in x64.

2. The core codes consists of two parts:

(1) Mission codes.

This part is used to write the upper executable functions.

(2) Datasource codes.

The part contains two classed, one is ‘DataStoreTrimGrid.cpp/.h’, which is used to get the grids which are meticulously partitioned based on the area balance of long and narrow patches; the other is ‘DataGridSplitMerge.cpp/.h’, which is used to correct the boundaries of the regular grids.

3. The provided sample data is in the folder ‘Test data’, and narrowPatch.shp is the narrow pattern patches and unNarrowPatch.shp is the non-narrow pattern patches, which both can constitute a complete overlay data.

4. The provided output data is in the folder ‘Output files’, and grid25.shp is the initial regular grid with 5×5; grid\_amend.shp is the grids are meticulously partitioned based on our method; grid\_repair.shp is the grid boundaries which are corrected by our method.

5. The test configuration file is id301.xml and id302.xml.

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