

From: 李思思
To: [Gitau, Margaret W](#)
Subject: Latest version of DHM-WM without ArcGIS
Date: Thursday, May 10, 2018 11:38:11 PM
Attachments: [DHM-WM without ArcGIS.zip](#)

Hello, Dr. Gitau,

The attachment is the latest version of DHM-WM, which migrated from ArcGIS.

A bit out of expect, I found the computing efficiency has been greatly improved. Now, it takes about 10 min per simulation year for AXL and 2 min per simulation year for LREW. Although I used a better desktop, the improvement of computing efficiency is still amazing!

In addition, besides Hargreaves, FAO Penman-Monteith equation is added to do PET estimation, so that users can choose which method to use based on their data availability.

However, there is still a problem with this version of script: The "fill hydrological pits of DEM" function of the PyGeoprocessing open-source package does not work as expected. The issue has been recognized by the developers of the PyGeoprocessing, and they released a new version (V1.0.0) a few days ago that seems to fix this problem, but in that version some other functions necessary to DHM-WM are not available. I asked them whether they planned to bring them back in the future, but do not get any response yet.

For this reason, the "watershed preparation.py" cannot complete the task right now. Now, I run it two times, one to do analysis before the "fill pits" function, and the other after the "fill pits" function. Between the two runs, I do "fill pits" using ArcGIS.

The problem makes the applicability of this version of model awkward right now, but this issue is promising to be solved in the future. And I guess we can develop the GUI first, and address the problem and modify the scripts later.

Sisi