

# Data processing tools for raster based flood simulation

**Yun Seok, Choi**

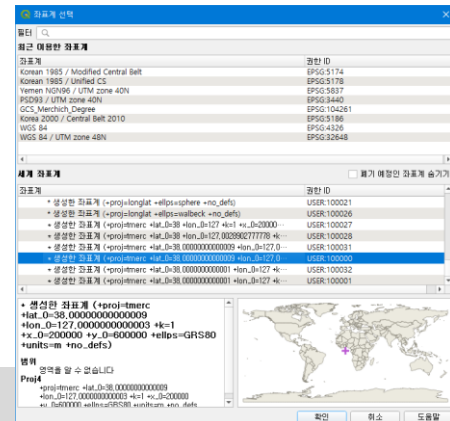
Department of Land, Water and Environment Research,  
Korea Institute of Civil Engineering and Building Technology

<https://github.com/floodmodel/References>



- 1. QGIS**
- 2. QGIS 3.8 plug-ins**
- 3. ALTEK tool**
- 4. How to get the softwares**

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- The screenshot shows the 'TMS for Korea' menu item selected in the 'Plugins' menu of the QGIS application. The menu is open, displaying a list of TMS providers. The 'TMS for Korea' option is highlighted in blue. Below it, other providers like 'OpenLayers 플러그인 소개', 'Daum Maps', 'Naver Maps', 'VWorld Maps', 'NGII Maps', and 'Mannor Maps' are listed. The 'TMS for Korea' option is the first one in the list.



# ❖ QGIS 3.8 plug-ins

- **Plugin reloader** : 설치된 플러그인을 다시 로딩
- **TMS for Korea** : 위성영상, 지도 등 가시화, 데이터 중첩 분석 가능
- QGIS **"Serval"** plug-in : 몇 개의 격자 값 수정에 효과적
- "플러그인 관리 및 설치" 메뉴에서 저장소 추가

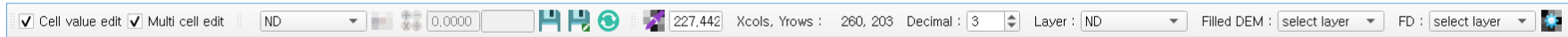
<https://raw.githubusercontent.com/floodmodel/repository/QGIS3.8/master/plugins.xml>

- ▷ **Drainage Tool** : 수문학적 공간정보 생성(흐름방향, 하천망, 유역 등)

**TauDEM** : Drainage Tool을 실행하기 위한 필수 S/W

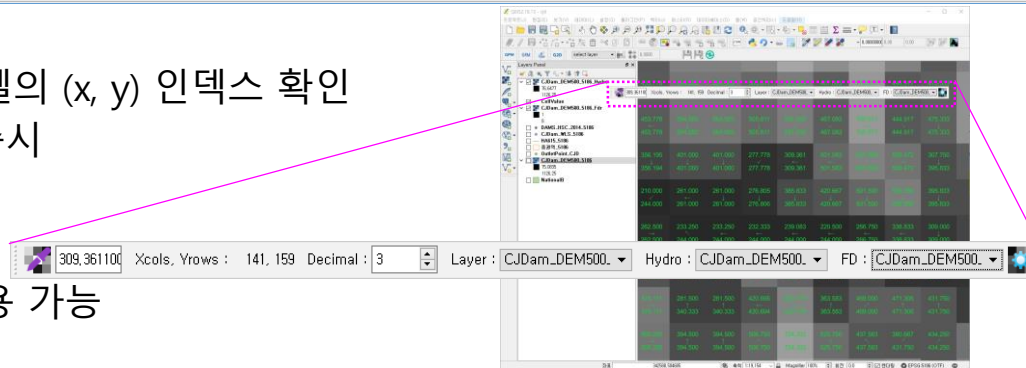
<https://github.com/dtarb/TauDEM/releases/tag/v5.3.1> (TauDEM531\_prerelease.exe)

- ▷ QGIS **"Cell Editor"** plug-in



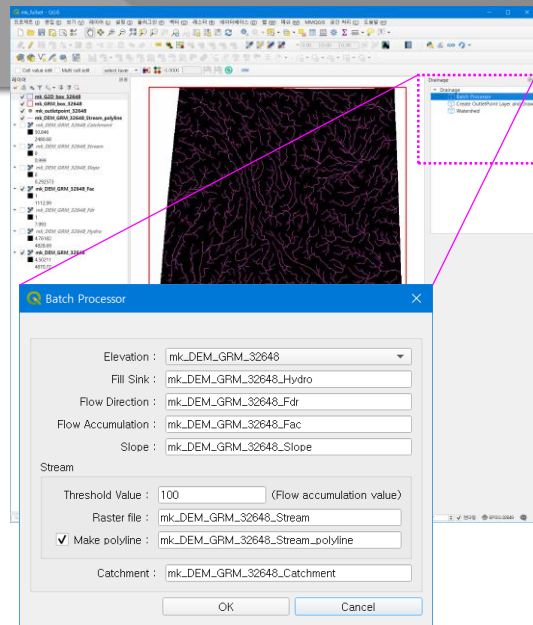
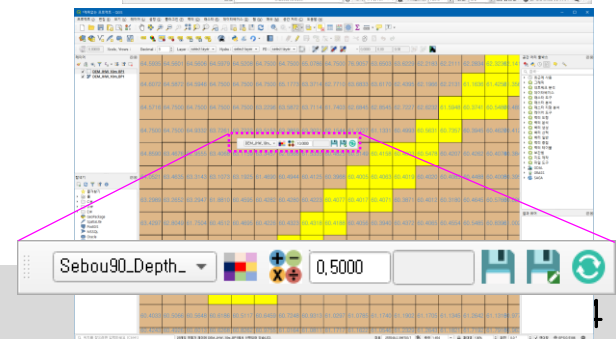
## • Cell value editor

- 흐름방향을 고려한 셀 값 수정, 선택한 셀의 (x, y) 인덱스 확인
- 1차원 유역 모델(GRM 등) 입력자료 구축시 DEM 수정에 활용 가능
- GRM, G2D 모델의 watchpoint 설정, 경계조건 설정 지점 위치 확인 등에 적용 가능



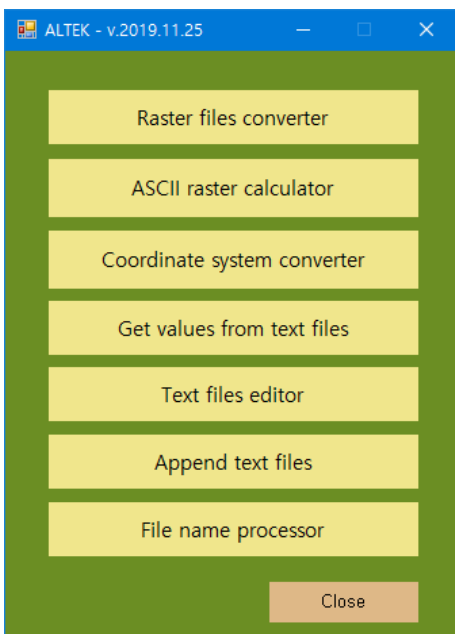
## • Multi Cell Edit Tool

- 다수의 셀 값을 일괄적으로 수정, 다양한 셀 선택 기능
- 선택된 셀을 같은 값으로 수정
- 선택된 셀을 같은 값/비율로 증감
- G2D 모델의 DEM 수정에 활용 가능



## ● ASCII raster file, text file processing tool (ALTEK) : 다수의 파일 처리

[https://github.com/floodmodel/ALTEK/tree/master/DownloadStableVersion\\_BinariesAndDocuments](https://github.com/floodmodel/ALTEK/tree/master/DownloadStableVersion_BinariesAndDocuments)



### ○ Raster files converter(using GDAL tool)

- Convert GTiff files <-> ASCII raster files
- Convert GRIB/GRIB2 files -> ASCII raster files
- Convert ASC raster files -> image files
- Clip and resample ASCII raster files
- Get raster files information

### ○ ASCII raster calculator

- Algebraic or conditional calculation of ASCII raster files

### ○ Coordinate system converter(using GDAL tool)

- Convert coordinate systems in a batch process

### ○ Get values from text files

- Extract values in a cell of ASCII raster files
- Calculate average values of ASCII raster files
- Accumulate all ASCII raster files
- Aggregate ASCII raster files in some interval
- Extract values in a certain column of text files

### ○ Text files editor

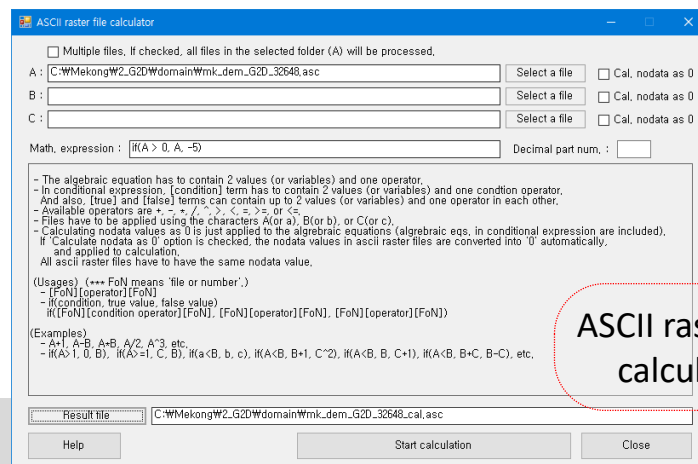
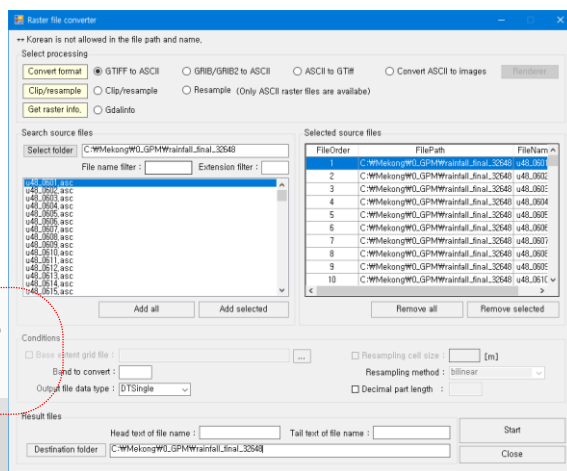
- Replace text in text files
- Search and replace lines in text files
- Insert a line to text files
- Remove lines from text files
- Replace values in certain region of ASCII raster files
- Cut decimal parts in ASCII raster files

### ○ Append text files

- Append text files in column mode
- Append text files in row mode

### ○ File name processor

- Rename files
- Rename files to DateTime format
- Change the extensions of files
- Save file list (full path and name) to a file
- Make a batch file using file list



Raster file  
converter

ASCII raster file  
calculator

# How to get the softwares

- Searching web site
  - Search Google (<https://www.google.com>)  
using keywords "floodmodel", "github floodmodel", "floodmodel drainage"  
"floodmodel altek", etc
- QGIS plug-in tools repository location
  - (QGIS 3.8) [https://raw.githubusercontent.com/floodmodel/repository\\_QGIS3.8/master/plugins.xml](https://raw.githubusercontent.com/floodmodel/repository_QGIS3.8/master/plugins.xml)
- GitHub website
  - <https://github.com/floodmodel>
  - ALTEK은 QGIS plug-in이 아니므로,  
[https://github.com/floodmodel/ALTEK/tree/master/DownloadStableVersion\\_BinariesAndDocuments](https://github.com/floodmodel/ALTEK/tree/master/DownloadStableVersion_BinariesAndDocuments)  
에서 다운로드 후 사용

# Thank you...