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How to run cookbook "fastscape_eroding_box.prm"?

Qyunian   **Jan 12**

I found there is a cookbook can link FastScape and ASPECT, it's interesting and I'd like to run this .prm file.
But I found that, although there is aspect-main/source/fastscape.cc source code, the answer also is "There is no such subsection to be entered: Mesh deformation.Fastscape".
I think it's because that the fastscape.cc file doesn't be complied, so I copy the "fastscape.cc and fastscape.h" as plugin. But it has the same answer "There is no such subsection to be entered: Mesh deformation.Fastscape".

```
-- Detecting CXX compile features - done
-- Setting up plugin:
--   name <fastscape>
--   using ASPECT_DIR /public5/home/sch8017/software/aspect-main/build
-- Configuring done
-- Generating done
-- Build files have been written to: /public5/home/sch8017/fastscape/plugins
[sch8017@ln1%bscc-t6 plugins]$ make
[ 50%] Building CXX object CMakeFiles/fastscape.dir/fastscape.cc.o
[100%] Linking CXX shared library libfastscape.release.so
[100%] Built target fastscape
[sch8017@ln1%bscc-t6 plugins]$ cd ..
[sch8017@ln1%bscc-t6 fastscape]$ ls
fastscape_box.prm  plugins   slurm-9807468.out   slurm-9807531.out   sub.sh
```

Can anyone tell me how to run the fastscape_eroding_box.prm in cookbook folder(aspect-main version)?

🔗 **Cmake problem when couple ASPECT and FASTSCAPE**

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                                                                        Jan 15

Hi Qyunian,

I sent the installation instructions by email as well, but I thought it would be useful to post it here as well until I can add documentation on installing/using the coupling.

1. The following needs to be exported in .bashrc for fastscape visualization to work. Though, I am not sure if this needs to be done every time or only during installation. If this is not set, the models will still work but the VTK files will not show anything when opened in paraview.

export GFORTRAN_CONVERT_UNIT='big_endian'

2. Clone fastscape from my github branch. This includes the file that writes fastscape visualizations within the aspect model folder.

git clone `https://github.com/Djneu/fastscapelib-fortran`

3. Build fastscape so that it creates a shared library (.so) file for ASPECT to link to:

cmake -DBUILD_FASTSCAPELIB_SHARED=ON /path/to/fastscape

4. Install ASPECT with a flag to tell it to link to ASPECT and where the .so file is:

cmake -DASPECT_WITH_FASTSCAPE=ON \

-DFASTSCAPE_DIR=/path/to/fastscape/build \

/path/to/aspect

On a side note for visualization, fastscape VTK's will not be written with a time and can't be immediately shown on top of ASPECT in paraview. For this, in contrib/fastscape there is a python file, you can run this within the model folder and it should convert the .vtk to .vts files which include the same visualization timings as ASPECT. Although, looking through that file, in lines 48 and 148 it still points to a VTK folder whereas now the files are written in a fastscape folder so those two lines would need to be updated.

🔗 **Problem with sedimentary filling process**

🔗 **How to visualize topography on top view in Fastscape**

Qyunian   **Jan 17**

Hi Derek,

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~~~~~~~~~~~~~~~~~~~ lp, it's going well. you are so friendly and professional.

But I also have some trouble, that is after I rewrite topography.vtk as topography.vts and topography.pvd successfully. I also can't visualization topography by opening topography.pvd in Paraview. I don't know how to deal with it.

Here is my output ./fastscape with topography.pvd, topography.vtk, topography.vts.
Looking forward to you.
⬇ **fastscape.zip** (5.0 MB)

🔗 **How to visualize topography on top view in Fastscape**

Djneu   **Jan 17**

I ran a test, and it seems that

> export GFORTRAN_CONVERT_UNIT='big_endian'

does need to be set in the terminal before running a job otherwise the visualization won't show. Could you add the line to your .bashrc and make sure it is loaded by using the command:

> echo $GFORTRAN_CONVERT_UNIT

If this says big_endian, could you try again and see if the visualizations work?

Qyunian   **Jan 17**

Hi Derek,

Thanks to your patient answer.
I did add the "export GFORTRAN_CONVERT_UNIT='big_endian'" into my .bashrc file. And "echo $GFORTRAN_CONVERT_UNIT" command did show "big_endian".
And I get the topography.vtk successfully. But after I convert topography.vtk to topography.vts, Paraview also can't show this file. I don't know why.
what do you think of rewite.py? Can it be the problem of my Paraview version(5.11.1 with python3.9) or Python(3.9.6)?
If it's possible, could you send your eroding_box topography.vtk output for me? I'd like to know whether it's the problem of my rewite.py.

sincerely,
Shaohui

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