Agenda

- 1:15-2:00 pm (Seminar room)
  
  FATES Practical Orientation:
  “Running FATES: what do you need to know?”

- 2:00 - 4:45 (Library)
  
  Self guided FATES practical

- 4:45 (Library)
  
  CLM Tutorial Wrap Up

- 5:15
  
  Bus pick-up
RUNNING FATES: WHAT DO YOU NEED TO KNOW?

- NGEET/fates github website
- Navigating the code and folder system
- CLM <-> FATES compatibility
- Modifying a run:
  - FATES namelist
  - FATES parameters
- Modifying output (history)
- Practical sessions
https://github.com/NGEET/fates

repository for the Functionally Assembled Terrestrial Ecosystem Simulator (FATES)

Add topics

0 802 commits

16 branches

12 releases

10 contributors

rgknox committed 13 hours ago Merge pull request #327 from rgknox/rgknox-near1.4.1_a3.0.0_rev2 Latest commit 865431e 13 hours ago

- .github Edited language in the PR template 12 days ago
- biogeochem Conflict resolution merging NCAR/NGEET. Trivial, resolution, both sid... 14 hours ago
- biogeophys modular allometry: moved some prep functions to outside the specific ... 4 months ago
- fire Changed file permissions on fire 3 months ago
- main Conflict resolution merging NCAR/NGEET. Trivial, resolution, both sid... 14 hours ago
- tools added execution permission on pthindexswapper and added silent mode o... 11 days ago
- CONTRIBUTING.md added link to developer repo policy and fixed a couple typos 11 days ago
- LICENSE.txt updated copyright year in license file to 2018 12 days ago
- README.md Update README.md 27 days ago

- README.md
Where does the FATES code live? (in CTSM)
Where does the FATES code live? (in CTSM)
Where will our practice runs live?

- cime
- scripts
- other stuff...
- tools
- run1_1x1brazil
- run2_1x1brazil_structure
- run3_f45_2pfts

/glade/scratch/$USER

- scripts
- modifiers
- parameters
- namelists

The executable
- Model Output
CLM <-> FATES COMPATIBILITY
CLM-master: Master FATES, shake my hand good fellow.

FATES-master: What is this rubbish, who holds their cane in their 7th hand!
CLM (fates_next_api)

Yes, yes, much better

Yes indeed.

FATES (master)
CTSM master will automatically checkout a compatible FATES tag from their repository when you run:

```
./manage_externals/checkout_externals
```
To use the cutting-edge FATES code. You will need the master branch from the NGEET/ repository, and use git commands to checkout:

fates_next_api
Modifying a Run - Namelist
## Fates Namelist Controls


<table>
<thead>
<tr>
<th>Option</th>
<th>Type</th>
<th>Default w/FATES compset</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>use_fates</td>
<td>true/false</td>
<td>.true.</td>
<td>Turns on/off fates!</td>
</tr>
<tr>
<td>fates_paramfile</td>
<td>String (filepath)</td>
<td>default file</td>
<td>path to an alternative netcdf fates parameter file</td>
</tr>
<tr>
<td>use_fates_spitfire</td>
<td>true/false</td>
<td>.false.</td>
<td>SPITFIRE fire model</td>
</tr>
<tr>
<td>use_fates_logging</td>
<td>true/false</td>
<td>.false.</td>
<td>Turns on/off the logging module</td>
</tr>
<tr>
<td>use_fates_planhydro</td>
<td>true/false</td>
<td>.false.</td>
<td>Turns on/off the plant hydrodynamics module</td>
</tr>
<tr>
<td>use_fates_ed_st3</td>
<td>true/false</td>
<td>.false.</td>
<td>Turns on/off Static Stand Structure mode</td>
</tr>
<tr>
<td>use_fates_ed_prescribed_phys</td>
<td>true/false</td>
<td>.false.</td>
<td>Turns on/off Prescribed Physiology mode</td>
</tr>
<tr>
<td>use_fates_inventory_init</td>
<td>true/false</td>
<td>.false.</td>
<td>Turns on/off initialization from plant inventory data</td>
</tr>
<tr>
<td>fates_parteh_mode</td>
<td>integer</td>
<td>1</td>
<td>Specifies which plant allocation model to use</td>
</tr>
<tr>
<td>fates_inventory_ctrl_filename</td>
<td>String (filepath)</td>
<td>blank</td>
<td>When inventory initialization true, points to control file</td>
</tr>
</tbody>
</table>

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Fates parameter files & manipulation

https://github.com/NGEET/fates/tree/master/parameter_files

https://github.com/NGEET/fates/wiki/Useful-Stuff
FATES History Variables, where the magic happens.

https://github.com/NGEET/fates/blob/master/main/FatesHistoryInterfaceMod.F90
What if I want to be a developer?

https://github.com/NGEET/fates/blob/master/CONTRIBUTING.md
Running FATES: A Walk Through, February 2019

Model run 1 - (Getting a run going)

1. Learn how to execute a simple fates run
2. Two optional methods of evaluating output

Model run 2 - (studying output)

1. Learn about different sorts of FATES output
2. Learn about adding new history variables.
3. Plotting up FATES-specific size-structured output (python)

Model run 3 - (studying parameters)

1. Learn about FATES PFTs
2. Learn about changing PFT file.
3. Do a global run
4. Plot output of global run. (matlab)
Extra Slides
Where does the FATES code live? (In E3SM)

n.b. This directory structure is a bit different to earlier versions of CLM, if you are used to those.