

Ben Foster <foster@ucar.edu>

TIEGCM with Qian et al. eddy parametrization and 2.5-degree resolution 4 messages

Juho lipponen <juho.iipponen@helsinki.fi> To: foster@ucar.edu

Thu, Jun 4, 2015 at 8:52 AM

Hi

Unfortunately, due to a large number of other projects, we have had very little time to experiment with the TIEGCM development version (r1061) you sent me on July 17th 2014.

However, now that we have decided to pay more attention to the TIEGCM, I would like ask a few questions, if I may. First of all, we have read the paper by Qian et al. [2009], and a more recent one by Pilinski and Crowley [2015] about the eddy diffusion parametrization in the TI(M)EGCM model and how much it improves the correspondence between neutral density observations and the model results. To turn on the seasonal dependent Qian parametrization, is it adequate to just set the EDDY DIF flag to 1 in the input file, or is there something else we need to do? I understand that the eddy parametrization scheme is under constant development, but I think it would be worthy of a mention in the model documentation as a one possible namelist parameter, since now I had to manually search through the model source code to find out that such a flag exists.

Secondly, we would like to run the model at the 2.5 degree resolution. I have downloaded the higher resolution gswm files, but I can't find any examples of source files that could be used to initialize a 2.5 degree model run. Would you please be able to provide me with a source file for a higher resolution model so that I would be able to test the initialization?

Thirdly, how are you progressing towards TIEGCM 2.0? If the release is near, we would be most pleased to help you out by testing a some similar development version you gave us previously (and this time, I promise, we will reserve time for the TIEGCM in our schedules). Our primary concern are the disturbance-time neutral densities and winds near 270 km measured by the GOCE satellite, which only a small number of papers have yet reviewed. Thus, we believe they can give us significant new insight into the dynamics of the lower and middle thermosphere.

Thank you for your time answering these small questions.

Sincerely, Juho lipponen Finnish Meteorological Institute Earth Observation and Space Research Division

Ben Foster <foster@ucar.edu>

Thu, Jun 4, 2015 at 12:00 PM To: Juho lipponen <juho.iipponen@helsinki.fi>, Liying Qian <lqian@ucar.edu>, "Stanley C. Solomon" <stans@ucar.edu>, Wenbin Wang <wbwang@ucar.edu>, Hanli Liu <liuh@ucar.edu>

Juho,

I am cc'ing Liying, Stan, Wenbin and Hanli for their comments.

Yes, EDDY_DIF is a namelist parameter, with default==0. It should be sufficient to set it to one in the namelist input file to turn it on. We have not put this in the documentation yet because it is still in "development". Lihing may have further information.

You can find TIEGCM 2.5 degree source histories in:

http://download.hao.ucar.edu/pub/tgcm/data/tiegcm1.95/

Files *dres*.nc are "double-resolution" source files.

We have been close to releasing v2.0 for some time, but I have been diverted to working on WACCM-X for the past few months, and have not had time to prepare benchmark runs, updated docs, etc. We definitely would like to include any modifications that you and the AIM group agree on in v2.0.

There have been 3 (minor) commits to the tiegcm/trunk since r1161. Its important for you to use the latest trunk revision, so we are all working with the same code for commits and updates. For that reason, I would like to give you read-only permission to access the tiegcm source code via our SVN repository. Have you used SVN in the past? You can checkout the code without logging into the hao network by using a proxy URL. To get access to the hao repository, a person from CISL (Gary Studwell) will need to call you to set up a password. If this is agreeable to you, please send me your phone number, and suggest a time of day that might work for both you and Gary. Then I can help you with basic use of SVN. If a phone call does not work out, I can ask Gary if there is an alternative.

Thanks a lot for taking the time to work with us to tune and improve the model.

--Ben

[Quoted text hidden]

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Ben Foster <foster@ucar.edu> To: Joe McInerney <joemci@ucar.edu>

Joe, sorry, I forgot to cc you on this: [Quoted text hidden]

Juho lipponen <juho.iipponen@helsinki.fi> To: Ben Foster <foster@ucar.edu>

Hi, Ben

Thank you for the double resolution source files, I will try them out today.

Thu, Jun 4, 2015 at 12:10 PM

Fri, Jun 5, 2015 at 12:01 AM

I will also gladly accept the read-only permissions for your SVN repo. We, at the FMI are only using Git, so unfortunately I have never used SVN before. However, I assume the two are very similar and I believe that the latter can be "cloned" using Git, which I think is enough for our purposes. The time difference between Finland and Colorado just makes our communication a bit tricky, but I think that the best time for you to give me a call are your office hours between 8:00 and 10:00, which corresponds to a local time between 17:00 and 19:00 here in Finland. I have to leave the office early today at 14:00, but feel free to call me on Monday (or any day you choose, except on Fridays). My phone number is +358408430854.

Looking forward to hear from you, Juho [Quoted text hidden]