Notes ITM5 Discussion with users
26 April 2013, 12:00-14:30 hrs

Attending: Maarten Krol, Wouter Peters, Peter Bergamaschi, Narcisa Banda, Arjo Segers, Patricia Castellanos, Twan van Noije, Aki Koyama, Sander Houweling, Philippe Le Sager, Nikos Daskakis, Sourish Basu, Willem Verstraeten, Arby Zhang, Bram Maasakkers, Ingrid van de Laan-Luijkx, Folkert Boersma.

1. New version TM5
The group discussed the possibility to report on TM5 v4-beta in the upcoming paper by Narcisa Banda, as in that paper the HO_2 production from SO_2 oxidation is repaired, M7 is implemented, including the effects on photochemistry. However, aerosol removal is still too fast, and there is still the CO issue, lightning NOx has been improved, CBM5 + OH regeneration from isoprene oxidation, slopes-scheme improvement. Before releasing a formal v4 (and a complete benchmark paper) these issues need to be resolved/included. Consensus: let's wait with a formal v4 release and use Narcisa's upcoming paper.

2. Wiki
Philippe made a wiki available (tm.knmi.nl). He already filled it with documentation on the use of the rc-files, the SVN, and how to check out the code. Philippe has not yet been able to copy the information from surfgroepen because there is too much information there. Ultimately, we would like to host a full user guide at the wiki (from downloading, compiling, to running of TM5). Feedback from TM5 user community on the wiki is highly appreciated.
Sourish asked about rc keys specific to some project. Answer: their documentation should go on their own wiki-page (see http://tm.knmi.nl/index.php/Output_options for an example).
A page with tested platforms (and performance TBD) would also be nice.

3. TM5 bug reporting
Documentation of bugs is really important to TM5. Users discussed the option to 'ticket' bugs with a unique number, and also label the importance of the bug (low-medium-high). How to report bugs is something to discuss in the SC. Subsequent actions such as informing other users, and documentation of the bugs is also up for discussion in the SC. Options discussed: newsletter, RSS-feed from SVN or/and wiki.

4. TM5 website
TM5 users recognized the need to first build a site, then decide where to host it. What should be on the website? There was some discussion on whether or not to host presentations from the ITM5 meeting online. There are pros and cons obviously, but leaving it to the individual presenters to decide seems a good solution. Another option is the hosting of a 'discussion group' to share common experiences/solutions etc. (available on the wiki). This will put burden on the structure of the website, and might be more appropriate for the wiki. It was also proposed to have a "picture of the month"/highlights feature, programs of the ITMs, list of ongoing projects, and a FAQ page on the site.

5. 1° x 1° OD meteo for NOAA

Sourish: OD reprocessed meteo exists from 2003-2013 (1° x 1° HDF). For the years before 2003 there is a solution to NOAA. The meteo will be extended to date about twice a year by Sourish.

Philippe: EI@1x1 has been processed back to 1979, so now we have a complete 1979-2012 (30+ years). The archive is in hdf format. Plan to convert the entire archive to netCDF later this year. As usual, fields for 2013 and after will be processed on a monthly basis as data become available.

6. Any other business

Twan mentions the recent start of the SPECS project (seasonal to decadal predictability), led by IC3 (Barcelona). KNMI's contribution includes a study of the impact of including interactive stratospheric O_3 (using linearized chemistry) on predictability through EC-Earth.

Nikos remarks that chemistry in TM5 is unreadable. It should be easier to check and change the code of chemical reactions and rates in future versions of TM5.

Peter: works on MACC-II project on the inversion of CH4, moved from SCIAMACHY to GOSAT. INGOSS project – on model validation, including analysis of BLH and links to Transcom BL height studies.

Next ITM5 Meeting

Next ITM5 meeting at SRON, Tuesday 12-13 November 2013, starting Tuesday afternoon.

TM5 Steering Committee Meeting
26 April 2013, 15:00 –16:30

Attending: Maarten, Wouter, Peter, Twan, Philippe, Folkert, Maria, Andy

Base

- For Reduced Grid we will recommend a preferred setting. Double ring should be avoided for Reduced Grid. Philippe will take care of this in the code. The recommendation will be documented as a wiki-page.
- Slopes: annihilating slopes in the convective core seems like a logical improvement. If 40% of the gridbox is convective, the slopes will be reduced by that fraction. Should go into the new base version. WP will implement in the trunk.
- Zoom versions of TM5-chem are broken at the moment (photolysis & CH4 nudging). Should be fixed before v4 is released. Philippe with DT will fix the code.
- `user_output.f90` averaging issues to be resolved. AJ will add his version to the trunk, and that will be copied to v4 release. *AJ to correct. This will also be communicated via the mailing list, since many copies of user_output_mmix.F90 are lying in the different projects. Each project administrator is responsible for updating/merging his project.*
- Re-integrate Horizontal Diffusion? Not yet, still in research-phase. *WP to correct.*
- Research item (not for v4): revisit convective scheme (Tiedtke et al.)

Chem

- Vincent will update implementation of heterogeneous reactions in TM5 as done in C-IFS and look into HO_2 uptake over the next 6 months. Goal is to at least have tested the effect of heterogeneous HO_2 uptake before v4 benchmark.
- AOT low bias: probably because of too effective wet removal of aerosols. Narcisa, Twan and Maarten will look into this actively over the next months. Previously Joost had to twist scavenging efficiencies by a factor of 10 in order to find a substantial effect.
- Lightning bug correction should be in release v4. Twan has already fixed this, and it is already in the trunk. No action needed.
- CBM5 is something to include post v4.
- MEGAN emissions online to go into SVN → Marly to coordinate this with Philippe.
- Maarten will share methyl chloroform benchmark code for testing OH (*on SVN? MCK to correct*)

Bug-reporting

Philippe proposes to start a bug-fix page on the wiki. No ticketing. Philippe will investigate whether a part of the wiki can have restricted access. On a restricted page all the bugs will be reported but none on the public part (too much work to copy/select bugs to public part).

RSS-feed on the wiki is an option: just go to the "recent changes" page, and click on the "atom" link in the left sidebar (note that the feed is currently polluted with fake new user accounts being created by robots - Philippe to fix).

SVN-strategy

For LE, they make "patches" (basically lots of minor releases). All modifications go into a new branch, as it is already suggested for TM5.
From the discussion, there is a need to clarify our svn strategy. Among other things, to keep the trunks stable, commits to the trunks are restricted to the DT. Philippe will draft a svn strategy page on the wiki to be reviewed by the SC at the next meeting.

Development team status

There have not been very many demands for development to Philippe yet, so things still seem manageable. SC will ask Arjo (and he agrees) to look into online-offline comparison of meteo aspects to try to limit the number of factors that cause the difference between online-offline transport mechanisms in TM5 versions using the same meteo.

TM5 website = responsibility SC

Publication of a TM5 newsletter will be postponed. First the website needs to be made. Folkert and Maarten will work together on this in May.

Next code-sprint

Focus should be to make a new release and test it with as many people and platforms as possible.
To be held at the end of August 2013:

- fix remaining issues
- test/install on various platforms

Anticipated participants: DT, plus SC-members.

Any other business:
- **Format of the ITM5 meeting**
  Folkert asked for feedback on the format of the last ITM5 meeting: in principle OK, but a little bit more time per presentation would be appreciated. 1.5 days instead of 1 day is a good idea.
- **Meteo-preprocessing on a regular basis**
  Andy inquired into this. <mark>Andy please comment.</mark>

Next SC Meeting
3 July 2013 at IMAU; 17:00 hrs. BBQ at Waterweg 114^A De Bilt, afterwards. BYOB.