TM5 SC meeting 20/12/2022

Agenda:

1. Action points
2. New Action points

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| Action # | Title | Responsible | Tracker id. |
| 8.3 | 4D-VAR frozen versions of CH4, CO, CO2 on Sourceforge (as package) | SB |  |
| 10.3 | Investigate possibility to develop IFS-TM5-MP coupling | WP+MK |  |
| 12.1 | Move code to GitLab TNO | AS, PlS |  |
| 12.2 | Move issues from redmine to pdf.file and open important issues on GitLab | PlS |  |
| 12.3 | Check reported issue on 3D OH field (Spivakovsky) used in 4dvar | ND |  |
| 12.4 | Check reported issue with convection (Andrew Schuh) | AS |  |

**8.3:** Maarten will ask Sourish. Also it will be asked whether we would move the sourceforge TM5—4DVAR-zoom to GitLab TNO. Sourish could try to do this, with help from Philippe.

New action item: 13.1 (MK)

**10.3:** Coupling worked, but was slow. Now things have changed. Chemistry will be part of open-IFS (open-IFS-AC). Likewise there will be a carbon cycle version (open-IFS-CC). Closed.

**12.1: Done**

**12.2:** Pls will work on this. End Jan 2023, the redmine server will stop. So, the important tickets should be moved to TNO Gitlab. Leave open!

**12.3:** No action taken yet. Anne-Wil saw also issues with the OH fields from Spivakovsky. So point stays open.

**12.4:** No action was taken, and point is yet unclear. Andy Jacobson has now a paper out (ACPD, 2022). We will remove the point.

**New Issues and new Action list:**

AS is working on a library to compare TM5 to satellite data. It is suggested that Anne-Wil and Joram (WUR) could act as beta-tester. Action 13.2: AS: share the library with Anne-Wil and Joram.

Discussion XIOS: was made for output, and reading is later introduced. Still development expected. Currently the gain for TM5-MP-4DVAR is expected to be limited. No current action.

Discussion Mass-conservation in TM5-MP: we will set up a group to tackle this in detail. Members: Arjo, Joram, Jason, Phillippe, Andy. Action 13.3, AS.

Discussion vertical layers. Following other models, we should consider to increase the vertical levels. Andy reports that AirCore comparisons show too fast vertical transport. Earlier experience shows that for stratospheric transport, more vertical layers reduce (numerical) diffusion. Action 13.4 (MK): discuss with Jin Ma a small project to test the impact on vertical transport in TM5. We could then also propagate the CT fluxes

Non-active TM5 users: There are a couple of groups that use TM5 and do not actively participate in the meeting/developments of the model. As SC we will write a friendly e-mail asking their attendance (virtual or in person) to the TM meetings, and an active attitude when it comes to model development. Action 13.5 (MK).

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| Action # | Title | Responsible | Tracker id. |
| 12.2 | Move issues from redmine to pdf.file and open important issues on GitLab | PlS |  |
| 12.3 | Check reported issue on 3D OH field (Spivakovsky) used in 4dvar | ND |  |
| 13.1 | SB: What is the status of frozen versions, and do TM5-4DVAR version from SF to GitLab? | SB & MK |  |
| 13.2 | Share library of satellite comparison tools with WUR (Anne-Wil & Joram) | AS |  |
| 13.3 | Set up a group to debug the mass issue in TM5-MP: Joram, Andy, Jacob, Philippe, Arjo | AS |  |
| 13.4 | Test the impact of # vertical layers on transport in TM5. Test with e.g. CT fluxes | MK |  |
| 13.5 | E-mail to non-active users TM5 |  |  |

**Next meeting: 16-17 October, 2023, Crete, Greece.**