

Template for Annual SCOR Working Group Reports to SCOR

1. Name of group

Working Group 151 FeMIP

2. Activities since previous report to SCOR (e.g., virtual or in-person meetings, email discussions, special sessions). Limit 1000 words

No in person meetings, but a well-attended virtual meeting was held in Dec 2020.

3. Documents published since previous report to SCOR (e.g., peer-reviewed journal articles, reports, Web pages) and should be limited to publications that resulted directly from WG activities and which acknowledge SCOR support

Iron model evaluation tools : <https://github.com/RGRJON002/FeMIPeval>

4. Progress toward achieving group's terms of reference. List each term of reference separately and describe progress on each one. Limit 1000 words

Objective 1: As reported last year, although an open access article was being drafted by Tagliabue, the uncertainties about what closures are optimal, it was not thought it useful to lay out a definitive view on how iron should be represented in earth system models. The WG agreed that is premature to share code, but that sharing inputs fields would be a very useful step forward for data sharing. This process has progressed slowly and we are still faced with question marks on where and how these fields would be hosted. It will be resolved and ToR/Objective 1 completed by end of 2021.

Objective 2: We have published a github repository (FeMIPeval: <https://github.com/RGRJON002/FeMIPeval>) containing a set of standard scripts to assess the iron cycle component of earth system models against the GEOTRACES intermediate data product 2017. This arose from preliminary work by Marcello Vichi at UCT and was discussed and commented on extensively by working group members at the last in person meeting and the virtual meeting. While work is ongoing by working group members and the broader ocean modelling community to translate scripts into other languages, this release constitutes the meeting of ToR/Objective 2.

Objective 3: Andy Ridgwell has made progress since the last in person meeting at OSM on the efforts to assess the process affecting the residence time of iron in the ocean. Work was presented at the virtual meeting by Ridgwell and following this he and Tagliabue and taking things forward to produce a peer reviewed paper that will mark the achievement of ToR/Objective 3.

Objective 4: The summary begun by Boyd, and further developed by Dutkiewicz, Tagliabue and Twining, on the hierarchy of approaches to representing iron biological and biogeochemical processes in earth system models has been more or less completed. We need to plan a specific meeting for the

working group members interested in the aims of ToR/Objective 4. The outcome of this meeting will frame the scope of the plans to deliver on ToR/Objective 4.

5. WG activities planned for the coming year. Limit 500 words

Plans would be for a virtual meeting before end of 2021 to focus on the biological iron cycle aims of ToR/Objective 4.

A (potentially final depending on the scope of ToR/Objective 4) in person meeting at OSM 2022 is planned.

6. Is the group having difficulties expected in achieving terms of reference or meeting original time schedule? If so, why, and what is being done to address the difficulties Limit 200 words

We are of course challenged by the fact that we cannot meet in person. Before the pandemic we already discovered that progress outside of in person meetings is very slow. People are busy and also people are now understandably tired of zoom. We hope that the resumption of in person meetings will stimulate the group further. That said, we do note that the group remain very enthusiastic and engaging together.

7. Any special comments or requests to SCOR. Limit 100 words.

One year continuation of existence would be appreciated

Additional information can be submitted and will be included in the background book for the SCOR meeting at the discretion of the SCOR Executive Committee Reporter for the WG and the SCOR Secretariat.