

Review gmd-5-1669-2012

„Describing Earth System Simulations with the Metafor CIM“

General Comments:

Enabling and fostering the standardisation and use of meta-data in Earth system modeling (ESM) activities has been a long-time desirable for many many years. METAFOR (and CURATOR) have the potential to start delivering this.

There is a need to describe the Common Information Model (CIM) in much detail, but hardly an opportunity. So it is very good for the climate community to have a place for this description here. The m. describes VERY well how the complex problem of metadata in ESM can be tackled by dividing it up into tractable modules. This is a generic approach which is of high value for Earth System Model developers, too.

The methodology to establish the framework and it's potential for further development are described rather well. Not only does the manuscript describe how this can be achieved, but also illuminate to the reader what the building blocks for a meta-data system are, and how they are assembled in interaction with the modeling community.

The text requires quite a lot of pre-knowledge to be completely understood. The final achievements and future relevance should be made a bit clearer.

Concerns how much the CIM will be used in the community's every-day-life are valid, and would deserve some comment in the article: It would make sense to introduce to the reader those initiatives and activities that not only develop the CIM concepts further but also broaden and foster their use in the community.

What is not clear in all cases is how the decision processes about certain aspects of the SW development worked: Who was involved in these processes, and how much were they matter of reviews by the community (and not only driven by CMIP5 requirements): See also specific comments.

So, again, One last general comment: I would like to see a bit more of the perspectives of the future use of the CIM.

Specific Comments

Page 1675, line 11 - 13: "The difficulty with the requirements of this CIM mixture was that we quickly discovered that there were no pre-existing information structures with rich enough syntactic and/or semantic structures to support our goals, so we needed to develop our own." Questions: Who is "we" here: The authors of the paper? The METAFOR-team? Please explain! Behind this sentence there is a decision process: How did it work? Who was involved? E.g. the word "rich": What exactly do you mean by it? What was the metrics for the decision that the preexisting structures were not rich enough? How was this evaluated? I would like to see more detail here.

p 1677, line 22: The models are rather badly described, much less so the analysis and post-processing programs: Can they be put into the same basket as the models? I.e. do these programs have the same quality in terms of their metadata as the models? Are they really „fully described subcomponents“!?

p 1678, line 22: Who is working on ConCIM today, and what are the plans for this? What is the community involvement?

p 1678, line 25,26, p 1679 l1 is not comprehensible to me, please rephrase!

p 1680, 3 - 7: Are there any concrete plans? Or experiences in other communities?

p 1681, line 11 and 12: Why are they less suitable for machine processing? line 14: What were the workarounds? To whom were they delivered? Reference?

p 1681/82, § 5: Are there any plans to use the CIM to steer other SW than OASIS!?

p 1682, line 9/10: Are there any self-describing models around!?

p 1683, line 27, p 1684, lines 1/2: Are there any concrete initiatives to develop such methods? If so, please provide a reference!

Fig 1: What do the different arrow tips mean? And what about the colour coding? There are probably more elaborate versions of this figure: Could you provide a reference, please!?

Technical Corrections

None