Dear referees,

Thank you for your kind and detailed remarks on our manuscript. We tried to resolve all open points and correct the text. I would like to answer in detail to your comments:

To referee 1:
> Title:
Since version 5.0 of ESM-Tools has been released, I wonder if it would make sense for the authors to document the latest version, provided that the upgrade from 4.0 to 5.0 is not too dramatic, such that a significant part of the text needs to be updated/revised. This is up to the authors to decide. -> Done

> I'd suggest the authors state upfront that ESM-Tools is not a coupling software early in the Introduction and/or Abstract. I thought (or at least was in doubt) it has this capacity until I read later in the manuscript. Such a statement can be added at, for example P1L18 and P2L37. -> Done

> P1L11: …the ESM-Tools "are"…
The authors treat the ESM-Tools randomly either as singular or plural throughout the whole manuscript. Please make it consistent (I think it should be a singular noun). -> Done

> throughout the text, the authors use inconsistent references to the figures, e.g. fig x, fig (x), Figure x. Please make it consistent and comply with GMD format if any. -> Changed that to be GMD compliant, which is Fig. 3 in the middle of a sentence, Figure 3 at the beginning.

> P1L12-13: In fact, … standalone simulations.
I don't see this sentence as important info in the abstract, as the previous sentence has mentioned this point. If the authors decide to have it, more information on FESM2, ECHAM, ICON is needed, for example at least on what components they are (ocean or atmosphere or). Full names are usually needed but that would make the abstract tedious. -> Done

> P2L29-30:
I don't quite understand when the authors say that 'ESMs are usually written for a specific purpose'. It reads ambiguously to me; do the authors mean 'configured for a specific purpose'? -> tried to write that more clearly

> P2L45:
I don't understand what 'script-based coupling' is. -> Changed to "and off-line coupling through separate scripts"

> P3L71:
Do the authors mean 'nesting' of model components here? Since it is a tool for coastal ocean modelling, it should only have the ocean model component, right? -> Yes.

> Figure 1:
I don't see the point to have this as a figure. These are very basic lines and the description in the text is sufficient. In addition, the caption is a bit colloquial, e.g. it could be 'Some basic

requirements need to be met before…' -> Changed the sentence, would like to keep the figure as it demonstrates how easy it is to install, which, annoyingly, is one of the mayor objectives when we try to convince scientists to try it.

> P6L148:
I agree the tool would save lots of time for researchers, but I don't see how the tool would have the 'potential of reducing model diversity'. -> removed that

> P6L154:
This sentence seems to be coming out of the blue, especially 'solving a model run error'? -> Removed it.

> P9L204-244:
This part of the text does not fit the scope of this subsection (2.2.2 YAML Configurations) and should be moved elsewhere, for example in the discussion. -> I don't agree, as this is the main motivation for using yaml rather than shell scripting. Would like to keep it here.

> I also find the tool very useful for educational purposes and for provenance/reproducibility of model simulations. The authors have mentioned the latter, but perhaps that can be stressed even more. -> Definitely, but as that wasn't anything we have experience with already, we skip that to a later time.

> P9L215:
I don't understand this 'compile time switches'. -> Changed to "preprocessing options"

> Table 3 seems to be not referred to in the text at all. -> Done

> P12L270-271:
This is up to the authors to decide if they think it could be useful: it would be good to elaborate a bit more on the tool's log file and post-processing capacity. For example, for the log files, does the tool collect all the log info from each component and put/condense them together, or most log info still stays with their respective component? For the post-processing, does the tool offer things like netcdf conversion, climatology/time series calculation, or even cmorisation to name a few? The feature of online automatic cmorisation would be very useful for many. -> As this is partly discussed right at the moment, we would not like to elaborate too much on that point right now. We applied for a project to work on exactly that, but alas, that will not be funded - so we are unsure about the strategy, or even funding.

P12L275-276:
I like this esm_vis feature a lot, but I don't agree on this point, since modellers can always sanity check the simulations anytime without having to wait for the whole run to be completed. I think the main advantage is that it is very convenient/handy to use and save modellers' time. -> Removed the sentence part ", since particularly for long-running jobs waiting for the job to complete (which may take several weeks) before noticing any errors can be avoided."

> P19L387-398: these two paragraphs are almost identical to the first two paragraphs in this section? Please check. -> Oops. that happened when restructuring the text. Removed the second paragraph.

Technical corrections:

> P1L20: move 'lately' up in the sentence, e.g. 'Compared to previous versions, ESM-Tools has lately been …' -> Done

> P2L42: The abbreviation HPC should come earlier. It does already, L 11.

> P2L51: please give the full name of SMHI. -> Done

> P2L55: 'This approach is also…' -> Done

> P3L67-68: should be updated; also see my first comment. -> Done

> P3L78: 'in our opinion it lacks…' -> Done

> P3L84: remove 'the' -> Done

> P4L89: please fix the ref for Righi et al. -> Done

> P4L101: 'The tool's application…' -> Done

> P4L105: '…applying an ESM…'; the full name has been defined at the beginning of the manuscript. -> Done

> P5L119, 122: 'dependent' -> Done

> P5L127: remove 'are' -> Done

> P5L137, and elsewhere in the manuscript: no space before and after '/' -> Done

> P5L138: '…, and some features will be…' -> Done

> P7L161: should the footnote to YAML come earlier in the draft where it first appeared? -> Done

> P7L163: '…, while the ESM-Tools…' grammar issue; please consider starting a new sentence. -> Done

> P7L174: 'organize'? -> Done

> Table 1, in the row of esm_calendar: ''but also works…' -> Done

> P8L178: 'to alter' -> Done

> P8L180: 'this dictionary' -> Done

> P8L181: 'execution of a compute job' -> Done

> Figure 3 caption: 'Section of…' -> Done

> P8L192: 'to generate' -> Done

> P8L192: 'and in this sense can enable…' -> Done

> P10L233: please try to avoid words like 'nicely' -> Done

> P11L242: 'for us', the authors mean 'core developers'? and the previous 'developers' are 'contributing developers'?-> Done

> P12L279: please avoid using 'you', 'your'. This also applies to P16L339 and P17L346. -> Done

> P12L280: 'the remainder of the supercomputer'? not clear to me -> to me neither, removed that

> P14L307: 'and the code' -> Done

> P16L316: 'the tool, which…' -> Done

> P16L319: remove 'even'? -> Done

> P16L342: 'configuration'; 'As an example, …' -> Done

> P17L347: 'see an example again from…' -> Done

> P18L355: '… Project phase 6, CMIP6, …' -> Done

> P18L371: ', which were discussed…' -> Done

> P18L372: 'point out that…' -> Done

> P18L378: 'as if it were…' -> Done

> P19L383: ', as we provide…' -> Done

> P19L407: 'webpage' -> Done

> P20L409: 'upcoming' -> Done

To referee 2:

I am happy with the changes that the authors made; I think that the revised version of the manuscript is much improved. The level of detail provided has been risen, the structure is better now, which aids in the understanding, also due to additional text such as in Section 2.1. My remaining comments are minor and listed below. I also recommend to check grammar, punctuation, and consistency in detail. Apart from the remaining minor issues, I would recommend a publication of the manuscript.
With kind regards.

L16: Perhaps add something like "once implemented with ESM-Tools" -> rephrased the part due to other referees comments

L34: "requires" -> Done

L98: Remove the bullet point, as this is not part of the listing. -> Done

L103f: Make this statement even stronger; it has to be emphasised ESM-Tools aid not in the coupling as such; just to avoid any misunderstanding -> Added a remark to the abstract to make it obvious

L131: Add the type of model and perhaps a reference. -> Added references

L136: right -> access privelidges -> Done

L137: Very specific coupled setups are supported, right? -> Yes

L138: What kind of conflict is meant? -> added " between standalone and coupled setup settings"

L190ff: Thanks for including this paragraph, but perhaps revise a little to make it briefly more clear, how the user defined functions are embedded in with ESM-Tools. -> in principle we showed that by the recipe, anything more would quickly go into the very technical bits.

L219ff: The listing of features is important and reads nicely, albeit I am wondering whether this is not a separate aspect, rather than a part of the Section 2.2.2 on the YAML configuration files; it reads rather like a section on "efficient maintenance" -> I don't agree, as this is the main motivation for using yaml rather than shell scripting. Would like to keep it here.

L382: Perhaps mention some publications whose model runs were supported by ESM-Tools -> Done

L440ff: There is some redundancy and doubling of text it seems in the last two paragraphs of the discussion. -> Removed the second paragraph