

Review ACPD-15-22567-2015

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General

The manuscript presents the structure, motivation and objectives of the Pan-Eurasian-Experiment (PEEX) project. The ambitious vision is clearly set in section 2 where the projects structure is listed as four focus areas. Consequently, the manuscript follows later on in section three the same construction. Overall, the manuscript presents and introduces well the PEEX projects and aims. In some few places (see below) I made some suggestions to reorder sentences for clarity.

Detailed comments

Page 22569, line 20: The term "urban environment" is used as one of the "Grand Challenges". From my viewpoint, "urban environment" is a wrong term here. It is not the "urban environment" as such but the change of it. This change might be driven by processes like migration from rural to urban areas, extension of urban area on cost of rural area etc.

Page 22571ff, line28ff: The sentence starting with: "The durability of infrastructure..." is not very clear. I would turn its logic around and center it around the "thawing permafrost", which is responsible for the future changes in durability of infrastructure and the loss (or dramatic change) of environmental structures needed for the survival of indigenous people.

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Page 22577, line 6ff: The sentence starting "Although these feedback..." in the part after the comma I would change the sentence accordingly: "...Finland, there is need to establish a flagship station network...". It makes the statement clearer, that this network need to be set up to meet the PEEEX needs. Further in the same sentence, the it would be more clear if the "other tools" are noted.

Page 22582, line 1: Here you speak about the "PEEX Preliminary Phase". Is there some time interval of this preliminary phase given? Is it still ahead or already passed? That is not clear at that point.

Page 22582, line 8: Here you mention the PEEEX-RI. Is it planned to move with PEEEX into the direction of an ESFRI (ERIC) type infrastructure? If so, there should be some note in the introduction on that goal.

Page 22582, line 22: I would replace "... enables to us find out ..." with "... enables us to address ...".

Page 22582, line 25: What do you mean in this sentence? Do you mean "in nature" or "in real" in this context? Of what the "deep multidisciplinary understanding" is needed? For what the "practical solutions" should be found?

Page 22583, line 1: I would write "PEEX is an active..." here.

Page 22583, line 14ff: This sentence does not read well (fragmented) and is not very clear. I understand, that PEEEX contributes to the formation of a new, integrated Earth system research community in the projects target area. The way to do this is to have an open access policy to the PEEEX research and modeling infrastructure and to invite international partners and organizations to do the same.

Page 22585, line 1ff: Parts of the paragraph starting from here would better fit to the introduction part as here some overall goals are presented that have not been noted before. Some abbreviations, like PEEEX-RI, would also be already introduced then. However, as the whole manuscript introduces the project and the major part of section four concludes it is not very easy to find a compromise where to present these topics, but it is worth to think a bit to restructure to set overall project goals more clear.