

Referee 2: We would like to thank the reviewer for the constructive comments. Our responses to each comment are given below in bold text.

The manuscript Introduction: The Pan-Eurasian Experiment (PEEX) – multidisciplinary, multi-scale and multi-component research and capacity building initiative is as stated an Introduction to a scientific research initiative of large scale and impact. As such it can be seen differently in terms of the current evaluation namely not assessed at this stage with respect to the results but the potential and the design of the initiative. Having this in mind the manuscript provides well thought documentation of the means in terms of human and infrastructure capacity it encompasses in order to solve the knowledge gaps and challenges it is designed to tackle. Some specific corrections and suggestions are given below for the revision of the manuscript.

Section 2 P 22753, Line 22 instead of “process understanding” better use understanding of processes.

Corrected.

P22754 line 10 instead of health use —human health or public health.

Corrected.

P22577 line 10 Measurements of the changes. This is too general Provide a paragraph explaining what some of these main measurements are (i.e hygroscopicity, cloud formation potential etc) and the techniques to achieve it.

We partly agree. We added a list of measurements that we consider very important, but did not go in the detail of listing the required experimental techniques, since there are several hundreds of those.

P22578 line 21 “. . .long term continuation of advanced measurements of aerosols, clouds, GHGS, trace gases” Again provide a description of what these advanced measurements are envisaged to be and what is here considered advanced. Maybe state of the art is adequate, provide some references of the type of measurement techniques implied

We added a short list of examples of the advanced measurement techniques.

P22580 lines from 10-20 A suite of models is mentioned with a general description. It would be helpful for the reader to have one representative reference of each type of model or modeling system

The problem here is that we do not want to restrict the set of models to be used in this project to one or two individual models of each type. Giving an example of each model type would easily give such (wrong) impression to the reader. Having several examples of each model type would, in turn, make the reference list exhaustive and imbalanced

compared with other parts of this manuscript. As a result, we feel that it is best to list the types of models planned to be used without references to different model types. In order to provide some reasoning to our approach, we added the following sentence after the first sentence of this paragraph (in line 9 on page 22580): “We have preliminary tested this kind of a multi-scale approach in a framework of an integrated European research project (Kulmala et al., 2011a).”

P22582 line 25 “ these interlinks are mainly very nonlinear” Instead of mainly probably is best to use often or in most cases.

We agree. Corrected.

P22583 line 23 Section 4 Title For this title since it is the concluding section is best to use: Summary and outlook of PEEEX in the future society

We modified the title as suggested by the referee.