



Visualization of a Retrograde Earth Experiment for Public Outreach

Niklas Röber (1), Florian Ziemen (2), Uwe Mikolajewicz (2), Guido Cioni (2,3), Martin Claussen (2,4), Klaus Fraedrich (2,4), Marvin Heidkamp (2,3), Cathy Hohenegger (2), Diego Jimenez de la Cuesta (2,3), Marie Kapsch (2), Alexander Lemburg (2,3), Thorsten Mauritsen (2), Katharina Meraner (2), Hauke Schmidt (2), Katharina Six (2), Irene Stemmler (2), Talia Tamarin-Brodosky (5), Alexander Winkler (2,3), Xiuhua Zhu (4), and Bjorn Stevens (2)

(1) Deutsches Klimarechenzentrum GmbH, Hamburg, Germany, (2) Max Planck Institute for Meteorology, Hamburg, Germany, (3) International Max Planck Research School on Earth System Modeling, Hamburg, Germany, (4) Meteorologisches Institut, Universität Hamburg, Hamburg, Germany, (5) Department of Meteorology, University of Reading, UK

A fundamental constant in our climate system is the revolution of the Earth around its own axis. To study the effects of this rotation in a climate model, one could shut it off, and compare the two worlds with one another. A more elegant approach, however, is to reverse the direction of rotation, and to perform a so called retrograde Earth experiment. While it is technically fairly easy to implement, the drastic changes occurring in all parts of the climate system, especially the atmosphere and ocean dynamics, make it challenging to present the results of such an experiment in a coherent and intuitive way. Thus, a well-crafted visualization concept is required to explore and explain the climatic changes caused by this reversal.

With our target audience being the general public, we also needed specific hard- and software that not only allows for an intuitive display of the results, but also for an active participation by our users. We use a large 55 inch 4k interactive display together with PREZI as presentation tool. Over 30 high-resolution animations and stills present individual aspects for the normal and retrograde earth side by side along with matching descriptions. They are grouped in the three areas of Atmosphere, Ocean and Land. This presentation allows users to explore the climatic effects autonomously while also providing an ideal basis for interactions between the scientists and their audience. The presentation has been shown at several venues and was always well received.