



Communication and perception of uncertainty via graphics in disciplinary and interdisciplinary climate change research

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Besides written and spoken language, graphical displays play an important role in communicating scientific findings or explaining scientific methods, both within one and between various disciplines. Uncertainties and probabilities are generally difficult to communicate, especially via graphics. Graphics including uncertainty sometimes need detailed written or oral descriptions to be understood. “Good” graphics should ease scientific communication, especially amongst different disciplines. One key objective of the Doctoral Programme “Climate Change: Uncertainties, Thresholds and Coping Strategies” (<http://dk-climate-change.uni-graz.at/en/>), located at the University of Graz, is to reach a better understanding of climate change uncertainties by bridging research in multiple disciplines, including physical climate sciences, geosciences, systems and sustainability sciences, environmental economics, and climate ethics. This asks for efforts into the formulation of a “common language”, not only as to words, but also as to graphics.

The focus of this work is on two topics: (1) What different kinds of uncertainties (e.g., data uncertainty, model uncertainty) are included in the graphics of the recent IPCC reports of all three working groups (WGs) and in what ways do uncertainties get illustrated? (2) How are these graphically displayed uncertainties perceived by researchers of a similar research discipline and from researchers of different disciplines than the authors of the graphics?

To answer the first question, the IPCC graphics including uncertainties are grouped and analyzed with respect to different kinds of uncertainties to filter out most of the commonly used types of displays. The graphics will also be analyzed with respect to their WG origin, as we assume that graphics from researchers rooted in, e.g., physical climate sciences and geosciences (mainly IPCC WG 1) differ from those of researchers rooted in, e.g., economics or system sciences (mainly WG 3). In a subsequent analysis, some basic types of graphics displaying uncertainty are selected to serve as input for the construction of “makeshift graphics” (displaying only the main features but including no detailed title or caption). These makeshift graphics are then used to assess how the displayed features are perceived and understood by researchers of various disciplines. In this initial study, this analysis will be based on results of a workshop including the wide diversity of researchers within the FWF-DK Climate Change. We will present first results of this work.