How to appreciate, use, and choose Scientific Colour Maps

Grace E. Shephard$^1$, Fabio Crameri$^1$, and Philip J. Heron$^2$

$^1$University of Oslo, Centre for Earth Evolution and Dynamics, Department of Geosciences, Oslo, Norway (g.e.shephard@geo.uio.no)

$^2$Department of Earth Sciences, Durham University, Durham, United Kingdom

The visual representation of data is at the heart of science. One of the choices faced by the scientist in representing data is the decision regarding colours. However, due to historical usage and default colour palettes on visualisation software, colour maps that distort data through uneven colour gradients are still commonly used today. In fact, the most-used colour map in presentations at the EGU General Assembly in 2018 - including Geodynamics sessions - was the one colour map that is most widely known to distort the data and misguide readers (see https://betterfigures.org/2018/04/16/how-many-rainbows-at-egu-2018/).

Here, we present the work that has been accomplished, the readily available solution, and present a how-to guide to „Scientific Colour Maps“ (Crameri 2018, Zenodo; Crameri et al. (In Review)), a methodology that prevents data distortion, offers intuitive colouring, and is accessible for people with colour-vision deficiencies.

