



Visualizing and communicating uncertainty in the earth and environmental sciences: a review

Edzer Pebesma

University of Münster, Institute for Geoinformatics, Germany (edzer.pebesma@uni-muenster.de)

I will review past attempts to visualising uncertainty in spatial or spatio-temporal predictions of groundwater quality, quality predictions, sea bed sediment, bird densities, air quality measurements, and exposure to air quality of individuals and populations. The attempts involved software development (aguila [1], greenland [2]), the development of standards for communicating uncertain spatial and spatio-temporal information (UncertML, [3]), and have been illustrated by applications in a number of EU projects (Apmosphere [4], INTAMAP [5], UncertWeb [6] and GeoViQua [7]). I will also report on usability studies that were carried out (e.g. [8]).

[1] <http://pcraster.geo.uu.nl/projects/developments/aguila/>

[2] <https://wiki.52north.org/bin/view/Geostatistics/Greenland>

[3] <http://www.uncertml.org/>

[4] <http://www.apmosphere.org/>

[5] <http://www.intamap.org/>

[6] <http://www.uncertweb.org/>

[7] <http://www.geoviqua.org/>

[8] Senaratne, H. L. Gerharz, E. Pebesma, A. Schwering, 2012. Usability of Spatio-Temporal Uncertainty Visualisation Methods. In: Bridging the Geographic Information Sciences, Lecture Notes in Geoinformation and Cartography, J. Gensel, D. Josselin and D. Vandenbroucke. Springer Berlin Heidelberg.