UAV-borne radioelement mapping

van der Veeke, Steven

DOI:
10.33612/diss.261264637

Propositions belonging to the PhD Thesis

UAV-borne radioelement mapping

1. UAV-borne gamma-ray spectrometry will replace airborne gamma-ray spectrometry in the near future.
   Chapter 7: Guidelines for UAV-borne radioelement mapping

2. The assumptions used to construct maps from UAV- (and air-) borne radiometric measurements lead to an inherently biased image that is not necessarily a good representation of the actual radionuclide concentrations in the ground.
   Chapters 3 & 4: Footprint and height corrections for UAV-borne gamma-ray spectrometry studies & Optimizing gamma-ray spectrometers for UAV-borne surveys with geophysical applications

3. Size matters, but bigger is not always better.
   Chapter 4: Optimizing gamma-ray spectrometers for UAV-borne surveys with geophysical applications

4. The assumptions on the spatial and temporal distribution of radon in the atmosphere are the main limiting factor for the accuracy of geophysical radon measurements.
   Chapter 5: Radon corrections for geophysical UAV-borne gamma-ray measurements

5. Gamma-ray spectrometers that autonomously perform radionuclide analysis are a blessing and a curse for users of a broad range of new applications. To lift the curse, all autonomously functioning spectrometers should adhere to a strict (to be drafted) data-processing standard.

6. The next significant development in geophysical gamma-ray studies, made possible by the continuous improvement of computing power, is the ability to implement the measurement geometry in real-time Monte-Carlo simulations.

7. Governmental IT systems should be open-source.

8. In the developed world, where well-stocked supermarkets are omnipresent, you should not eat meat.

9. Technological advances may find their origin at a university, but the actual development, from which society benefits, always occurs at companies.

10. The fact that parents and mothers certainly decay, and daughters may decay, leaves the question open what happens to male descendants.

11. Run.

Steven van der Veeke
January 2022