Geophysical Research Abstracts
Vol. 21, EGU2019-17620, 2019
EGU General Assembly 2019

Coupling big data and natural hazards: how machine learning and other methods for management and analysis of big data can support hazard and risk assessment of natural hazards in agro-forested ecosystems

Jonathan Rizzi

Norwegian Institute of Bioeconomy Research, Geomatics department, Ås, Norway (jonathan.rizzi@nibio.no)

It is widely recognized that the use of big data can have several societal benefits, such as a more efficient and effective decision making process, or a faster response to emergencies and in general to deviations from normal situations. Examples of areas where this can happen are land use, urban or transport planning, security, or even handling of natural disasters. Al this has been recently highlighted in a report written on behalf of the Norwegian government.

Within this context, a key role in the use bog data for the befit of the Norwegian society is played by NIBIO, the Norwegian Institute of Bioeconomy Research, working closely with Norwegian ministries. NIBIO is a research-based knowledge institution that utilizes its expertise and professional breadth for the development of the bioeconomy in Norway. Its social mission entails a national responsibility in the bioeconomy sector, focusing on several societal challenges including: i) Climate (emission reductions, carbon uptake and climate adaptation); ii) Sustainability (environment, resource management and production within nature and society's tolerance limits); iii) Transformation (circular economy, resource efficient production systems, innovation and technology development); iv) food; and v) Economy.

The presentation will show potential application of big data and machine learning in the bioeconomy sector, with a particular focus on agro-forested ecosystem, in order to improve the hazard and risk assessment of natural hazards, including climate related hazards. Preforming good hazard and risk assessment requires also the availability of several updated dataset, therefore the presentation will also show preliminary results from an ongoing project on big data, with a particular focus on the use of machine learning and remote sensing for automatic map changes/update.