



## **Uncertainty in Citizen Science observations: from measurement to user perception**

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Citizen Science activities concern general public engagement in scientific research activities when citizens actively contribute to science either with their intellectual effort or surrounding knowledge or with their tools and resources. The advent of technologies such as the Internet and smartphones, and the growth in their usage, has significantly increased the potential benefits from Citizen Science activities. Citizen Science observations from low-cost sensors, smartphones and Citizen Observatories, provide a novel and recent development in platforms for observing the Earth System, with the opportunity to extend the range of observational platforms available to society to spatio-temporal scales (10-100s m; 1 hr or less) highly relevant to citizen needs. The potential value of Citizen Science is high, with applications in science, education, social aspects, and policy aspects, but this potential, particularly for citizens and policymakers, remains largely untapped. Key areas where Citizen Science data start to have demonstrable benefits include GEOSS Societal Benefit Areas such as Health and Weather.

Citizen Science observations have many challenges, including simulation of smaller spatial scales, noisy data, combination with traditional observational methods (satellite and in situ data), and assessment, representation and visualization of uncertainty. Within these challenges, that of the assessment and representation of uncertainty and its communication to users is fundamental, as it provides qualitative and/or quantitative information that influences the belief users will have in environmental information. This presentation will discuss the challenges in assessment and representation of uncertainty in Citizen Science observations, its communication to users, including the use of visualization, and the perception of this uncertainty information by users of Citizen Science observations.