**An innovative operational strategy for forest attribute mapping and per-pixel error estimation within a design-based statistical approach coupling remote sensing and field data**

Reliable information about forest ecosystems is critical and the role of remote sensing in acquiring information has been debated by long time. Although remote sensing has made enormous progress in recent decades and map products derived from remotely sensed data are increasingly available, quality indicators and uncertainty estimates are lacking or achieved from models based on questionable assumptions. Therefore, clearer and more transparent validation and uncertainty estimation of maps remain major challenges in remote sensing of forests. Here we present dataDriven (https://github.com/saveriofrancini/dataDriven), an open access strategy that leverages cloud computing (Google Earth Engine) and high-level programming language (R) capabilities to enable users to easily produce maps of forest attributes and maps of the associated per-pixel error within a specific area of interest. This strategy uses a data-driven design-based statistical approach and relies on Sentinel-2 remote sensing data as auxiliary information, avoiding the need for extensive modeling associated with model-based approaches. Ground reference data must be available for a sample selected by simple random sampling, one-per-stratum stratified sampling or systematic sampling. A unique aspect of our operative strategy is the generation of both the attribute map and the corresponding map of estimated precision. This allows users to make informed spatial assessment of the attributes under investigation.