Examples of Sentinel-2A Mission Exploitation Results

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The Sentinel-2 Copernicus mission will bring significant breakthrough in the exploitation of space borne optical data. Sentinel-2 time series will transform land cover, agriculture, forestry, in-land water and costal EO applications from mapping to monitoring, from snapshot to time series data analysis, from image-based to pixel-based processing. The 5-days temporal revisiting of the Sentinel-2 satellites, when both units will be operated together, will usher us in a new era for time series analysis at high spatial resolutions (HR) of 10-20 meters. The monitoring of seasonal variations and processes in phenology and hydrology are examples of the many R&D areas to be studied. The mission's large swath and systematic acquisitions will further support unprecedented coverage at the national scale addressing information requirements of national to regional policies.

Within ESA programs, such as the Data User Element (DUE), Scientific Exploitation of Operational Missions (SEOM) and Climate Change Initiative (CCI), several R&D activities are preparing the exploitation of the Sentinel-2 mission towards reliable measurements and monitoring of e.g. Essential Climate Variables and indicators for the Sustainable Development Goals. Early Sentinel-2 results will be presented related to a range of applications and scientific domains such as agricultural monitoring at national scale (DUE Sen2Agri), wetland extent and condition over African Ramsar sites (DUE GlobWetland-Africa), land cover mapping for climate change (CCI Land Cover), national land monitoring (Cadaster-Env), forest degradation (DUE ForMoSa), urban mapping (DUE EO4Urban), in-land water quality (DUE SPONGE), map of Mediterranean aquaculture (DUE SMART) and coral reef habitat mapping (SEOM S2-4Sci Coral). The above-mentioned activities are only a few examples from the very active international land imaging community building on the long-term Landsat and Spot heritage and knowledge.