BATUHAN OSMANOĞLU

SUSTAINABLE EARTH OBSERVATION FOR A SUSTAINABLE EARTH

As humans continue to impact Earth's ecosystem it is becoming ever more important to keep a steady eye on our planet's health. Only with timely and accurate information can world leaders implement policies to assure a sustainable future. In an era of increased demand on all resources, the future of Earth observation also depends on its sustainability.

Sustainable Earth observation encompasses both the development of methods for Earth observation tools and the data flow from these tools. The Sustainable Land Imaging – Technology Program, led jointly by NASA and USGS, is one such initiative that supports the development of innovative technology for new Landsat-like measurements for the next two decades. Another example is NASA's Earth System Observatory program, where data from multiple sensors are amplified through a system of systems approach, increasing the benefit of the observations. Commercial industry is also becoming more active in orbit, providing additional opportunities to deliver sustainable Earth observations.

In this presentation, we will go over current plans for sustainable Earth observation, with some examples of how these data help us keep tabs on Mother Nature.

CV

Batuhan "Batu" Osmanoglu holds a B.Sc. in telecommunications engineering and a Ph.D. in synthetic aperture radar interferometry time-series analysis. His dissertation was selected to be the most original research, and he is the winner of the University of Miami Rosenstiel School F.G. Walton Smith Prize for 2012. He worked on glacier remote sensing as a Post-Doc at the University of Alaska Fairbanks between 2011 and 2013. His primary area of expertise is radar remote sensing, and he has worked on applications for observing surface deformation, measuring target velocities, boosting signal-to-noise ratio in target detection algorithms, and

radar design and instrumentation. Since 2013 he has been working at the NASA Goddard Space Flight Center. He has been working on the instrument and algorithm development of P-, L-, X- and Ku-band synthetic aperture radar systems. He is the recipient of the 2015 NASA Goddard Heliophysics and Biospheric Sciences Award and the 2020 NASA Early Career Achievement Medal (ECAM) for his contributions. He is a member of the IEEE and American Geophysical Union and chaired the Microwave Remote Sensing working group under International Society for Photogrammetry and Remote-Sensing Technical Commission III between 2016-2022. He is the principal investigator for the Snow Water Equivalent SAR and Radiometer (SWESARR) for which his team received the Hydrosphere, Biosphere, and Geophysics (HBG) Annual Peer Award in 2021. He serves as one of the NISAR Deputy Application Leads, and the co-lead for Surface Deformation and Change mission study. He is a subject matter expert for the NASA Commercial Smallsat Data Acquisition Program and is the stakeholder engagement program lead for the Observational Products for End-Users from Remote Sensing Analysis (OPERA) project. He is working on several radar remote sensing projects on various topics such as surface deformation, snow water equivalent, flood, and topography mapping at NASA.