GeoNEX: Earth observations from operational geostationary satellite systems

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The latest generation of geostationary satellites (Himawari 8/9, GOES-16/17, FY-4, GK-2A) carries sensors that closely mimic the spatial and spectral characteristics of widely used polar-orbiting, global monitoring sensors such as MODIS and VIIRS. When combined, data from various currently operating/planned geostationary platforms provide a geo-ring of hyper-temporal (5-10 minutes), multispectral observations at spatial resolutions as high as 500 m. These high frequency observations offer exciting new possibilities for monitoring our planet, including better retrievals of geophysical variables by overcoming cloud cover, enabling studies of diurnally varying phenomena in the atmosphere, land, and the oceans, and support operational decision-making in agriculture, hydrology and disaster management. The NASA Earth Exchange (NEX) team, in collaboration with scientists from JAXA, KARI, NOAA and other international institutions, created the GeoNEX (www.nasa.gov/geonex) pipeline to integrate data from all available geostationary platforms and produce and distribute spatially, temporally, and radiometrically consistent data for the earth science community. To facilitate collaborative work among the partners, we have established the OpenNEX platform on the public cloud. OpenNEX provides researchers, developers, educators, and ordinary users with easy access to an integrated Earth science computational and data platform, enabling citizen scientists and application developers to realize the full value of GeoNEX data assets and software tools.

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