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TEMPO-Africa: Enhanced Air Quality Measurements from Space

Poor air quality is now one of the three main causes of premature morbidity, resulting in nearly 7 million deaths globally in 2022. Moreover, 99% of the world's population experiences air pollution levels exceeding World Health Organization guidelines, and fatalities in Africa from outdoor air pollution have increased nearly 60% in the last 30 years. Yet, our ability to mitigate poor air quality and the damage it causes is hampered by a lack of actionable information.

Fortunately, things are beginning to change. The Geostationary Environment Monitoring Spectrometer (GEMS), built for South Korea and launched in 2020, is the first in a new generation of satellites observing air pollution every daylight hour with around a 5-kilometre resolution. GEMS operates over the Korean peninsula and the broader Asia-Pacific region, and it is helping scientists to pinpoint more accurately what the pollutants are, where they are coming from, and to get a precise idea of where they are moving. Launching later in 2023, the Tropospheric Emissions: Monitoring Pollution (TEMPO), will do a similar job over North America, with slightly better spatial resolution. With that kind of information, governments, local authorities and businesses are better equipped to identify concerning areas and to make informed decisions about what action to take. Non-governmental organizations and the wider civil society can also use the information to hold governments and industries accountable for the quality of air we breathe.

In this presentation we'll outline a TEMPO-Africa concept and look to find partners to turn this vision into reality.

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