

Urban climate and temperature extremes in the Philippines By Dr. John A. Manalo

Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA)
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ABSTRACT:

This presentation explores the influence of urbanisation on temperature patterns in the Philippines through two complementary studies. The first presents a nationwide assessment of surface air temperature (SAT) trends from 1951 to 2018 using data from 34 meteorological stations classified as urban or rural. Results reveal significantly stronger warming in urban areas, especially in nighttime temperatures, with the most pronounced urban heat signal during the December-February season. The second study focuses on the diurnal variability of the urban heat island (UHI) effect in Metro Manila from 2014 to 2018. Using data from two PAGASA weather stations, findings show peak UHI intensities exceeding 4°C in densely built areas during early evening hours, with the strongest effects during the hot-dry season. Together, these studies highlight the growing impact of urbanisation on local climate and the need for urban planning strategies that consider temperature extremes and heat risk in Philippine cities.

About the Speaker:

Dr John Manalo is a climate and weather scientist at DOST-PAGASA, Philippines, with a strong background in urban climate, regional climate modelling and climate change. He holds a Ph.D. in Science from Tokyo Metropolitan University, where his research focused on how vegetation and urbanisation influence temperature and rainfall in the Philippines. At PAGASA, he is actively involved in developing climate change projections and assessing climate impacts related to climate variability, agriculture, and urban heat risk management. Dr. Manalo is passionate about making climate information more useful and accessible to policymakers, communities, and the general public.