Diurnal Variability of Urban Heat Island Intensity in Metro Manila, Philippines: An Initial Investigation

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Studies have shown that the Urban Heat Island (UHI) Effect driven by urbanization and industrialization is one of the major problems in the 21st century. In this study, the diurnal variability of urban heat island (UHI) intensity in the four stations located in populated cities in Metro Manila was investigated using the AWS measurements retrieved from the Philippine Atmospheric Geophysical and Astronomical Services Administration (PAGASA) of the Department of Science and Technology (DOST) from 2014 to 2018. Highest UHI intensity occurred at 20:00 PST was observed in the City of Manila (Port Area station, 4.03˚ C), at 21:00 PST in Pasig City (Pasig City Hall station, 2.95˚C), and at 19:00 PST and 21:00 PST in Quezon city (Science Garden station, 3.02˚C; La Mesa station, 4.28˚C, respectively). The maximum UHI intensity was observed generally during night time and lowest UHI intensity was observed during day time for all the stations. The results of this study will enable further research to better understand and mitigate the challenges brought by urbanization.

Keywords: Urban Heat Island (UHI), Temperature, Urbanization, Philippines

