Otsubo, A., and A. Adachi, 2024: Short-Term Predictability of Extreme Rainfall Using Dual-Polarization Radar Measurements. *J. Meteor. Soc. Japan*, **102**, https://doi.org/10.2151/jmsj.2024-007.

Plain Language Summary: The increasing use of dual-polarization radar in recent decades has allowed progressive elucidation of the characteristics of Z_{DR} columns, regarded as a predictive tool for extreme rainfall because a tall column appears when large raindrops are lofted well above the environmental 0 °C level by strong updrafts. Using an automated algorithm, we investigated the relationship between peak Z_{DR} column height and maximum rainfall rate near ground level, which has hitherto not been quantitatively evaluated, with a technique to reduce the effect of interference from hail when making radar rainfall estimation.

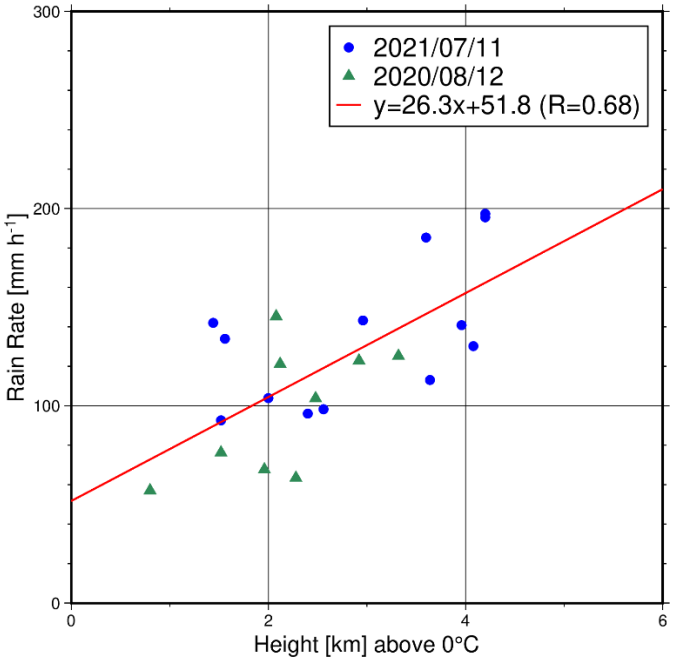

Figure 1. Scatter plots of peak Z_{DR} column height above the 0 °C level vs. the maximum rainfall rate at low levels. Blue circular and green triangular dots respectively represent the data collected on 11 July 2021 and those on 12 August 2020 in the Tokyo metropolitan area. The red line shows the linear regression, and the regression equation and the correlation coefficient are shown in the upper right corner.

- Peak column height is positively correlated with maximum rainfall rate near ground level.
- Rainfall intensity on the ground is likely to exceed 50 mm h^{-1} when radar identifies a Z_{DR} column.
- Extreme rainfall with an intensity of 180 mm h^{-1} or more is likely associated with a column over 3 km tall from the 0 °C level.