

Observing horizontal wind for extreme weather mechanism of urban area.

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In the summer season, the disastrous severe rain frequently occurs by Global warming in Japan. The small-scale convergence of humidity in the boundary layer is considered as one of the most important factor to determine the generation of such a disastrous rainstorm. The wind condition near the surface of the ground is affected by the ground condition so we cannot get the detailed information by direct observation. And it is very difficult to capture the urban wind condition in complex surface.

In my study, to get the wind condition of the lower atmosphere, I have started to successfully observe by using coherent doppler lidar (CDL) from May 26, 2015. CDL can observe air convergence of first stage because observing object is not raindrop but aerosol. I got the presence of wind strength in a small scale because the data of CDL is a 100m resolution.

By using the data of high resolution, I made the database for extreme weather mechanism of urban area.