

Kochi radar network composed of compact X-band radars

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Kochi Prefecture is the heaviest rain area in Japan. Heavy rain events and hazardous winds causing disaster frequently occur there. But, only one C-band Doppler radar of JMA and two C-band polarimetric radars in high mountains cover the area and warm rain near ground cannot be observed by these radars well.

Then we constructed high resolution radar network composed of 6 compact X-band polarimetric radars settled in Kochi Prefecture and started continuous observation. These radars are solid state type. The observation range and beam width of one radar is 80 km and 2 deg., respectively. The other 5 radar observes within 30 km and these beam width is 2.7 deg. They make volume scan at relatively low elevation angles every 1 minute and 1 km CAPPI data are obtained from them. These big data are corrected in science cloud in NICT via wonms settled at each radar sites. We can show the 1km CAPPI network data about 4minutes after the observation.

We succeeded to observe the organised convection systems, such as linear rain bands by 5 radars when torrential rain occurred in the west Japan in early July, 2018. We also observed the vortices in parent clouds causing tornadoes in detail.

Keywords: radar network, compact radar, cloud

