

A review on X-band radar for quantitative precipitation estimate

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Development of X-band weather radar from the end of World War II to the present is reviewed. It has been believed for long time that X-band wavelength was not adequate for QPE, however, this changed drastically after differential phase shift measurements became practical. The sensitivity of differential phase shift to rain rate at X-band wavelength is higher than that of C- and S-band wavelength. Its smaller size compared to C- and S-band radars and its high spatiotemporal resolution has accelerated its use as a gap-filling radar and a networked radar in urban areas. Multidisciplinary projects are ongoing in Japan, the US, and Europe, with the aim of developing more effective information from X-band polarimetric radar networks. The products from these experiments will provide the variety of information required by end-users, which cannot otherwise be attained from the nation-wide radar network.

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