Development of a configurable digital receiver for atmospheric radars

YAMAMOTO, Masayuki\(^1\ast\) ; GAN, Tong\(^1\) ; FUJITA, Toshiyuki\(^1\) ; NOOR HAFIZAH BINTI, Abdul aziz\(^1\) ; OKATANI, Yoshikazu\(^1\) ; HASHIGUCHI, Hiroyuki\(^1\) ; YAMAMOTO, Mamoru\(^1\)

\(^1\)Research Institute for Sustainable Humanosphere, Kyoto University

Recent progress in radar imaging techniques enables high-resolution measurements of wind and turbulence by atmospheric radars. In order to implement radar imaging techniques to existing atmospheric radars, a cheap multi-channel receiver needs to be developed. Further, for improving and verifying radar imaging techniques, a digital receiver which can change its real-time signal processing is highly useful. We are now developing a low-cost configurable digital receiver. Because the digital receiver comprises a general-purpose software-defined radio receiver and a personal computer, its purchase cost is low and its real-time signal processing is easy to be implemented. In the presentation, we report the current development status of the digital receiver.

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