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## **Preliminary Results of Volcanic Ash Plume Observation by Weather Radar Network around Sakurajima Volcano, Japan**

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It is said that weather radar can detect volcanic eruption in spite of cloudy or rainy conditions. However, the authors doubt that its quantitative accuracy and detection capability are not enough because reflectivity, one of the conventional radar parameters, cannot distinguish volcanic ash echo from precipitation echoes without other information. In such a circumstance, it is expected that MP (multi-parameter or polarimetric) radar can get more information about volcanic ash plumes. On the other hand, fast scan radar (e.g. phased array radar) observation technique in applications of severe weather monitoring is also getting better these days. We think combination of these kind of new radars will be the main stream of the volcanic ash plume observation. Meteorological Research Institute (MRI) installed an X-band MP radar (MRI-XMP) and a Ku-band "fast scan" radar (MRI-Ku) around Sakurajima volcano, south Kyushu, Japan. We've already observed several eruptions since March, 2016. The MRI-Ku has a special capability of getting a 3D dataset every 64 seconds, and therefore we believe that we acquired the world's first 1-min 3D structure of volcanic ash plume. On the other hand, the MRI-XMP was installed in order to develop a techniques of eruption detection in rainy or cloudy conditions, and to develop a quantitative ash estimation (QAE) method. In this presentation, the specifications of the radars and the preliminary results of the radar network including operational radars will be shown.