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Development of the online integrated archive system for NICT-Tohoku Univ. solar radio observation

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The importance of solar radio observations has been re-acknowledged in a space weather community lately. Solar radio bursts in GHz band are directly related to space weather disasters as follows: increase in GNSS positioning errors caused by interference in GNSS signals of solar radio bursts; and interruption of air traffic caused by radio wave interference in ATC (Air Traffic Control) radar system. Therefore, observation of solar radio bursts in GHz band is very significant from the viewpoint of space weather disaster monitoring. At the same time, solar radio bursts in MHz band is still recognized as the warning signals associated with formation and propagation of the CME-driven shock wave in solar corona. In addition, solar radio bursts in MHz and GHz band are closely related to each other in terms of their origin: each of them are generated by high energy electrons accelerated in the corona. Thus the wide-band observation of solar radio bursts has potentials enough to stimulate many researchers.

In National Institute of Information and Communications Technology (NICT), wideband (70 -9000 MHz) solar radio spectrograph in Yamagawa radio observation facility has been in operation. On the other hand, Planetary Plasma and Atmospheric Research Center (PPARC), Tohoku University started solar radio observation in lower frequency band (20-150 MHz). As for the frequency range, they are mutually complementary with each other and thus we could observe solar radio bursts in significant wideband under close mutual cooperation. For realizing this idea, we have been jointly working with Tohoku University to develop an online integrated archive system for solar radio observation datasets (FITS, etc.). This system aims to allow users to browse or handle all of data sets of solar radio bursts observed at Hiraiso, Yamagawa (NICT), Iitate, and Zao observatory (Tohoku University) in a sophisticated and integrated way.

In this presentation, we will briefly report the current status of development of the online integrated archive system for NICT-Tohoku Univ. solar radio observation.

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