[P6]

DATA STANDARDIZATION AND DISTRIBUTION OF NICT SOLAR RADIO OBSERVATION

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After the first observation of solar radio dynamic spectra by Wild and McCready (1950), a large number of solar radio spectrographs have been developed and they have observed solar radio bursts. In late 80's to early 90's, Communications Research Laboratory, predecessor of National Institute of Information and Communications Technology (NICT), started solar radio dynamic spectrum observation at Hiraiso, which is widely known as HiRAS (Kondo et.al., 1994). The HiRAS had the widest observation frequency range in the world at that time. However, the time went through twenty years from the development of the HiRAS system, the system has been decrepit. Because of this, a new solar radio spectrograph has been developed at Yamagawa radio observation facilities, NICT since 2013.

The HiRAS data are widely quoted in space weather forecasting as well as scientific research. However, as the raw data format is not standard format such as FITS (Flexible Image Transport System), treatment of the data is somewhat difficult and inconvenient. This situation is unfavorable to spread the use of the data. In order that many researchers can use our data, we have converted the non-standard original format data to the standard FITS format, which is the most popular in astronomy community.

The raw data format of the YAMAGAWA solar radio spectrograph is VDIF (VLBI Data Interchange Format), which is developed in VLBI community, because the spectrograph of the system is developed in VLBI community. The VDIF data is popular in VLBI community, but not popular in astronomy community. This is also unfavorable situation in order that astronomers use the data of new solar radio spectrograph. Therefore, the VDIF data should be converted to FITS format. As the data convert procedure is included in the new system, final outputs of the system are FITS data.

Since NICT is one of the members of World Data Center (WDC for Ionosphere and Space weather), we are considering that the standardized solar radio observation data, especially data obtained by new system, will be distributed from the WDC for Ionosphere and Space weather.

REFERENCES

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