Tsukuba VLBI Center

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Abstract

In this report, we present the summaries of the activities of correlator and related topics at the Geographical Survey Institute (GSI) from Mar. 1999 to Dec. 2000.

1. Correlator Processing

From Mar. 1999 to Dec. 2000, GSI K4 Correlator processed VLBI sessions as below.

- GSI domestic experiments (experiment code JADE, 9 times)

- Experiment between SYOWA and KASHIMA (Feb. 1999)

- Experiments between WETTZELL and TSUKUB32 (May and Jun. 1999)

- Remote controlled experiment between TSUKUB32 and AIRA (Dec. 2000)

Regarding GSI domestic experiments, we processed the data recorded with 64 Mbps before JADE-0002 in Jun. 2000. From this session, the data recorded with 128 Mbps was processed, and fringes were detected. Correlator summaries on domestic experiments are available on the GSI VLBI Web page from JADE-0002. URL is

http://vldb.gsi.go.jp/sokuchi/vlbi/english

From JADE-0003 in Sep. 2000, GIFU3 took part in JADE session. We processed and analyzed the data including GIFU3. In processing the data of the SYOWA experiment, fringes were detected for the first time with K4 correlator. The data of the WETTZELL experiments were processed with GSI correlator and analyzed at Bonn. For the remote controlled experiment, fringes were not detected, because Cesium, not H-maser, was used as a frequency standard at AIRA station.

2. Program Update for System Controller (CRC-9511-CNT1)

The problem that System Controller, which controls the correlator devices, incorrectly recognized record times was found. As system controller read the process time of each observation and station from temporary file generated from schedule file, system controller, in some cases, read the process times unrelated to the processing stations. As a consequence, correlation was not processed with the correct accumulation time. This error of the program for system controller was corrected and updated in Nov. 2000.

3. Y2K Problem

In application software for correlator, Kety KUS880419, Y2K problem occurred, and correlator processed incorrectly. The program was modified to fix the problem and now processing is correctly done.

4. Modification to Program for Bandwidth Synthesis

The program for bandwidth synthesis developed by CRL was modified. Length of data that could be processed by the program was originally less than 300 PP. Moreover parameter period was set to 1 sec, so the maximum data length was 300 sec. As a result of this modification and a change of PP to 2 sec., we can process the data of maximum 1024 sec. We are now reprocessing the data that is longer than 512 sec.

5. Staff

VLBI Staff at GSI are listed in the following table.

Table 1. Staff working at GSI VLBI group

Name	Position	Jobs
Shigeru MATSUZAKA	IVS Networks Representative	
Yoshihiro FUKUZAKI	Leader of VLBI group	
Tadayuki AKIYAMA	Collocation chief	Collocation, Operation
Kousei SHIBA	Operation chief	Experiments Coordination, Operation
Kazuhiro TAKASHIMA	Visiting scientist at GSFC	Improvement of software for VLBI analysis
Masaru YAZAWA	Analysis chief	Baseline Analysis, Operation
Shinobu KURIHARA	Operator	Baseline Analysis, Operation
Michiko ONOGAKI	Operator	Antenna and H-maser maint., Operation
Kohei MIYAGAWA	Correlation chief	Correlation, Operation
Kyoko KOBAYASHI	Assistant	Correlation, Operation

References

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[2] Ishihara, M., K. Nemoto, M. Iwata, K. Shiba, K. Takashima, and S. Matsuzaka: Tsukuba 32-m VLBI station, IVS 1999 Annual Report, pp.115–118, August 1999

[3] Takashima, K., S. Kurihara, M. Ishihara, K. Nemoto, M. Iwata, K. Shiba, M. Onogaki, and K. Kobayashi: Status and Results of GSI Domestic VLBI Networks, Bull. Geograph. Surv. Inst., Vol. 46, pp.1–9, March 2000