

Bonn correlator report

November 2023

Helge Rottmann, MPIfR



Correlator status and operations

Capabilities

Architecture:

- DiFX software correlator version 2.8.1

Playback units:

- 14 x Mark5 (SDK 9.4)
- 11 x Mark6 (5 Systems expanded from 4 to 6 bays)

Storage:

- Raw data: 3.0 Pbyte on BeeGFS parallel filesystem
- Correlated data: 132 TB (RAID 6)
- Archive: MPIfR tape library (mirrored, min. storage period 10 years)

E-transfer:

- 1 x 10 Gbps symmetric bandwidth
- 1 x 1 Gbps symmetric bandwidth
- JIVE5ab 3.0.0 (default)
- Tsunami

Data products:

- FITS (default)
- Mark4/HOPS

Hardware

- Cluster with 68 compute nodes (1360 cores)
- Allows for >3 parallel correlations without significant loss of performance

A more detailed overview of the correlator capabilities can be found at:

<http://www.mpifr-bonn.mpg.de/771785/DiFX-CORRELATOR>

Recent Activities /Status since last report (May 2023)

GMVA

- 2023 session I ([c231](#)):
 - **partially carried out at 16Gbps (ALMA, LMT, NOEMA, GLT, On, KVN, Mopra)**
 - pre-session fringe test ([f231a](#))
 - correlation ongoing (7mm finished)
- 2023 session II ([c232](#)):
 - pre-session fringe test ([f232a](#))
 - correlation started

EHT

- 2022 session:
 - band 4 finished, pending final check by C&E group
 - band 1 pending
- 2023 session
 - Pre-production fringe search ongoing

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Geodesy

- No backlog for standard IVS correlations
- Geodetic correlations :
 - 36 x R1 experiments
 - 2 x T2 experiments
 - 15 x INT3 experiments (including one VGOS-INT)
 - 5 x VGOS