

Here you can find a collection of documents which should support our WP on phasing ALMA.

1. This [presentation](#) by Bremer describes the present system and how the VLBI phasing is done. It also gives an overview over the next (NOEMA) system.
2. Online description of the present system at Plateau de Bure <http://www.iram.fr/IRAMFR/TA/backend/cor6A/index.html>
3. More details on phasing at PdB given in an [email](#) by Bremer.
4. Info von Bremer: Phasing bei 1mm klappt unter guten Bedingungen, aber wenn die Antennen im Winter weit auseinander stehen und das Wetter nicht stabil ist, klappt es weniger gut. Das Prinzip ist, dass wir eine "average phase offset" per Antenne und spektrales Subband ueber 2 Minuten bestimmen und es dann ueber die VLBI Beobachtung von etwa 7 Minuten konstant halten.
5. [Presentation](#) by Torres about the next BdB correlator and how the VLBI mode will be implemented
6. [An FPGA based Phased Array Processor for the Sub-Millimeter Array](#) is the master thesis of Vinayak Nagpal supervised by Weintroub.
7. Adam Deller's [memo](#) on VLA phasing and a [summary](#).
8. ALMA has chosen to use a set of 128 orthogonal Walsh functions, both for the sideband separation using 90-degree phase switching at the first local oscillator, and for spurious rejection using 180-degree phase switching at the first local oscillator with demodulation by means of a digital sign change shortly after the digitizer. A set of orthogonal Walsh functions can be defined and ordered in many different ways (PAL, Natural or Paley ordering, WAL, CAL & SAL sequency ordering) and with different phasing definitions (e.g. Harmuth phasing, or "positive phasing".) It is proposed here that ALMA standardize on a set of Walsh functions in WAL order with positive phasing. A numerical table is included, and is available in [machine readable form](#).
9. Document forwarded by Dave Graham on array phasing ideas from NASA for the DSN at [162B.pdf](#)
10. Document forwarded by Dave Graham on phasing of the MWA at [Mitchell IEEE RTScalibration.pdf](#)
11. [White paper](#) on phasing by Geoff Crew and others, based on Robert's document.
12. [Email by Geoff](#) on fast corrections and who may be in charge for this.
13. EVLA Phased Array Commissioning <https://safe.nrao.edu/wiki/bin/view/EVLA/PhasedArray>