

Internal JIVE BlackHoleCam meeting

Date: 18 January 2016, 11:00 in Arpad's office

Subject: pipeline WP, simulations WP

Present: Arpad Szomoru, Des Small, Mark Kettenis, Ilse van Bemmelen

Fringe fitting: AIPS versus CASA

Simulations are available from South Africa (RSA-sims) and from a local MeqTrees installation on Ilse's laptop. The initial results show that Des's CASA FRING produces delay and rate values similar to AIPS FRING, to within a percent. The RSA-sims have better control over the input delay, and one simulation has constant delay offsets. In that case, the CASA and AIPS results agree to within a fraction of a percent.

For the RSA-sims and MeqTrees simulations the difference between AIPS and CASA shows a trend in delay: it gets larger when the AIPS delay is larger. There are also trends in the rate, but these are much smaller. Next steps are to compare simulations with some variations in noise and gain to assess if this trend in delay is still visible when the data is noisy. We will also compare the results of a real dataset correlated with a known offset clock model, to see if CASA and AIPS still recover the same delay and rate.

Another issue is that the two polarizations have different delay and rate values, even though no polarization has been included in the models. The effects are small again, but we need to talk to an expert to understand how this could affect polarization calibration.

To prepare for the face-to-face meeting in Bonn, we will attempt to process an actual EVN dataset through CASA. Ilse has selected EA054, which has been processed in AIPS and the source has a well known structure. As an alternative we can continue to use N14C3, which is in the tutorial and one of the datasets known to work.

Fringe fitting: figure of merit

In order to get an idea of how well the least squares step in the CASA FRING has performed, Des is looking into defining a figure of merit. This could also help us to develop a better estimate for the signal to noise that needs to be reported for the reliability of the FRING results.

CASA development

There has been no sign of life from the NRAO people. Mark will send a reminder including the higher-ups to give it a boost.

Monitoring and control

In Nijmegen the BHC team is working on a monitoring and control tool. Pim Schellart is developing this. There is now a team including people from the US who are taking the lead in developing M&C for EHT. Dan Marrone from ARO is leading this. Both Arpad and Ilse are involved in the discussion.

Actions:

ID	Description	Owner	Ref.	Due
4	Write note on motivation for solver	Des	151019	
5	Compare CASA FRING prototype results to AIPS output using simulations	Des & Ilse	151019	Done
6	Write report on comparison with AIPS	Ilse	151019	
7	Contact NRAO CASA dev with suggestions for improvement of CASA VLBI data processing	Mark	151019	
9	Inquire about imager studies for LOFAR	Ilse	151019	
12	Test multiband delay correction	Des	151214	
13	Get real EHT data	Ilse	151214	
15	Organise visit to NRAO	Mark	151214	
17	Compare CASA and AIPS with real data correlated with known clock offset	All	160118	160219
18	Process EVN EA054 data with CASA	Mark & Des	160115	160219
19	E-mail NRAO again for CASA implementations	Mark	160115	done

Next meeting: Face-to-face meeting in Bonn, 22-23 February 2016