



## Data processing of AMBER data: FAQs

Paola Popesso - 2022-04-25 - Comments (0) - data processing FAQ for each instrument

### Data processing of AMBER data: Frequently asked questions

- **Where can I find tutorial on AMBER data reduction?**

**Answer:** The tutorials available on ADS are:

- Tatulli et al.: "Interferometric data reduction with AMBER/VLTI. Principle, estimators, and illustration", [2007, A&A, 464, 29T](#)
- Tatulli & Duvert : "AMBER data reduction", [2007, NewAR, 51, 682T](#)
- Tatulli, Malbet, & Duvert: "Presentation of AMBER/VLTI Data Reduction", [2008, LNP, 742, 257T](#)
- Millour et al: ""Advanced" data reduction for the AMBER instrument", [2008, SPIE, 7013E, 132M](#)
- Millour et al.: "AMBER on the VLTI: Data Processing and Calibration Issues", [2008, eic work., 461M](#)
- Chelli et al.: "Optimised data reduction for the AMBER/VLTI instrument", [2009, A&A, 502, 705C](#)
- Hummel:"Processing of AMBER data",[2008, NewAR, 52, 192H](#)

- **How does one apply FINITO data to the reduction of AMBER data?**

**Answer:** See Mérand et al. , [2012, SPIE, 8445E, 1KM](#).

- **Is there software available that makes use of the FINITO data?**

**Answer:** No, there is not. Currently this is at the discretion of the AMBER user. See also Le Bouquin et al. [2009, A&A, 493, 747L](#).

For FINITO/RMNREC, there is also a description of the data format in:<https://www.eso.org/paranal/instruments/amber/tools/RMNREC.pdf> which is also incorporated in the AMBER manual.

## Data reduction ISAAC Frequently asked questions

- **Are there any known problems with ISAAC data?**

**Answer:** The quality control group keeps a list of know problems at

<http://www.eso.org/observing/dfo/quality/ISAAC/ServiceMode/problems.html>

- **How can I 'extract' lines from the arc and match them to wavelengths?**

**Answer:** In order to run the `isaac_spc_arc` recipe, you also need to select the `CALPRO_XE_CATALOG` and `CALPRO_AR_CATALOG` files (see pipeline manual page 48), which correspond to fits files named something like `M.ISAAC.2008...` in your data directory. These files should have been downloaded through the `CalSelector` option. In `gasgano`, you can find them listed in "Unknown Program/Unknown Observation". Then, the recipe should no longer crash.

- **Are there any colour transformations available for the ISAAC filters and another filter system?**

**Answer:** Coccato et al. (Msgr, in preparation) computed color transformation between ISAAC and VIRCAM filters. Using the known color conversion between VIRCAM and 2MASS (<http://www.eso.org/sci/data-processing/faq.html#vircam>), it is possible to derive the following transformations between ISAAC and 2MASS photometric system:

$$J_S\text{ ISAAC} = 0.941 * J\text{ 2MASS} + 0.059 * H\text{ 2MASS} + 0.144$$

$$H\text{ ISAAC} = 0.976 * H\text{ 2MASS} + 0.024 * J\text{ 2MASS} + 0.057$$

$$K_S\text{ ISAAC} = 0.998 * K_S\text{ 2MASS} + 0.002 * J\text{ 2MASS} + 0.036$$

## Data reduction MIDI Frequently asked questions

- **Which reduction software is available?**

**Answer:** There are three, the ESO pipeline and two provided by the consortium. The latter two come together as the MIA+EWS package. The ESO pipeline is mainly used for quality control immediately after observations and for instrument monitoring. For Science Grade data reduction MIA+EWS is recommended. The IDL-wrapper "MyMidiGui", integrated into the "oyster" environment, is available for MIA+EWS

v.1.7.1 (see <http://www.eso.org/~chummel/midi/mymidigui/mymidigui.html>)

The most recent version of MIA+EWS is v.2.0 (see <http://home.strw.leidenuniv.nl/~nevec/MIDI/index.html>)

- **How do I best deal with photometry extraction?**

**Answer:** Problems with visibilities above unity etc. are usually due to the target photometry. The most critical step to obtain the best reduced data quality is the extraction of the (spectro-)photometry. Out-of-the box a mask is computed with some standard assumptions. If not of sufficient quality, this mask can be fine-tuned to improve background subtraction and spectro-photometric extraction. See <http://home.strw.leidenuniv.nl/~jaffe/ews/MIA+EWS-Manual/masks.html> for details.

If the night is stable (to be verified by, e.g., calibrator data), averaging of target photometry, for each optical path, meaning typically per baseline, can be considered.

- **How do I best deal with faint targets?**

**Answer:** Of the current reduction software packages EWS v.2.0 performs best on finding and extracting fringes for very faint targets.

- **Is it possible to calibrate the visibility data of our object with a calibrator observed in another mode?**

**Answer:** The calibrator data should be reduced using MIA in HIGH\_SENS mode (mode "D"). In that case, it does not use the photometric channels and the transfer function should be applicable to your science target