

# VLTI Memo

AMBER

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Dest. : all AMBER  
Copy to :  
Date : 11-01-2009  
Version : 1.0

Subject : **AMBER vis2 versus integration time for the UTs and ATs cases.**

Presents :

## Scope of this memo

This memo summarizes the test made in order to explore the dependency of the AMBER transfer function when using different different DITs, in the UTs and ATs cases.

## Data reduction and analysis

For the ATs, data have been taken between 2008-11-06T04:13 and 2008-11-06T05:28, with AMBER in Low\_JHK mode, with FINITO-H70 and with the baselines A0-D0-H0. For the UTs , data have been collected between ... with AMBER in MedRes, with UT1-UT2-UT4. Observations have been made with FINITO/OPDC in mode: complete, 5-fringes, 0.5ms. I used the standart package `amdlib-2.2`. I average all frames. This report focuses on the wavelength bins around  $2.17\mu\text{m}$  only.

In figure. 1 I plot the transfer function (v2) versus the AMBER DIT. I also plot the ratio between UTs and ATs. In figure 2 I plot the quantity  $V2.DIT$  which is proportional to the SNR on the interferometric observables.

The UTs performances are worst than the ATs ones, by a factor  $\sim 2$  for the shortest DIT of 25ms, and by a factor  $\sim 10$  for a DIT of 0.5s. As a matter of fact, long integration times are useless on the UTs, leading to a dramatically reduced limiting magnitude.

## Results and conclusions

- The ATs behave well, with a small loss of efficiency when using long DITs.
- The UTs behave badly, with a dramatic loss of efficiency when using long DITs.
- With the current performances of the UTs, the interest of using them for long-integrations with VLTI is questionable.

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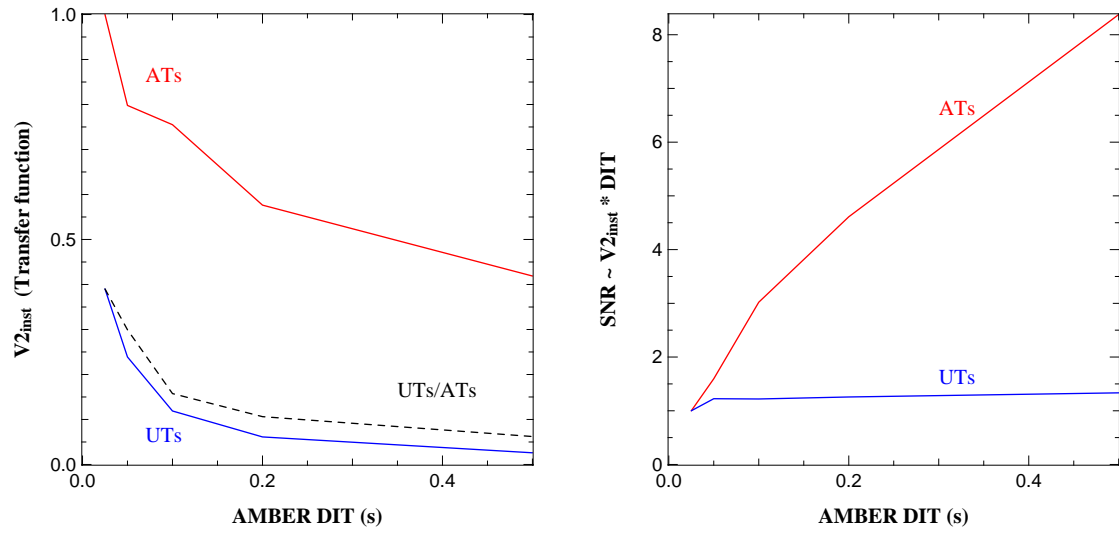


Figure 1: Left: AMBER transfer function versus the DIT, normalized to the best TF obtained (25ms on ATs). Right: estimation of the SNR versus the DIT, normalized by the value obtained for DIT= 25ms.