Imaging & spectroscopy

March 16th, 2016
F. Millour
Images in 2015
Colour images
Phases are important

- But not easily measured
- $N_{\text{tel}}(N_{\text{tel}}-1)/2$ Differential phases
- $(N_{\text{tel}}-1)(N_{\text{tel}}-2)/2$ Closure phases
- $(N_{\text{tel}}-2)(N_{\text{tel}}-3)/2$ Quad-phases

Diff. Phases not used in “gray” image reconstruction software
(MIRA, WISARD, BSMEM, MACIM)
Image cubes with interferometry

CO bandhead on Mira (Fabas et al. submitted)
Image cubes with interferometry

Intensity

Velocity

0.2 mas resolution = 500 picoradians
Image cubes with interferometry

Fabas et al. submitted
Existing chromatic software

- Self-cal / MIRA
  → self-cal.oca.eu

- PAINTER
  → github.com/andferrari/PAINTER.jl

- MIRA-3D

- SQUEEZE
  → github.com/fabienbaron/squeeze

- New: IRBIS
How to make image reconstruction user-friendly?

What language?
- Yorick/C++, IDL, Julia, Matlab, C/Plplot, C/ESOREX
Image reconstruction discussion

- G. Duvert: common data exchange between imaging softwares, work in progress (draft circulated)
- S. Kraus: common interface: working group at EII led by E. Thiébaut
- J. Young: probably not possible to use a common language as everyone has his own habits
- P. Stee: formation? US proposal contains an exchange program, EII is asking for more funds for VLTI schools
- P. Kervella: image reconstruction for OLBI is disappointing because of low number of telescopes.