

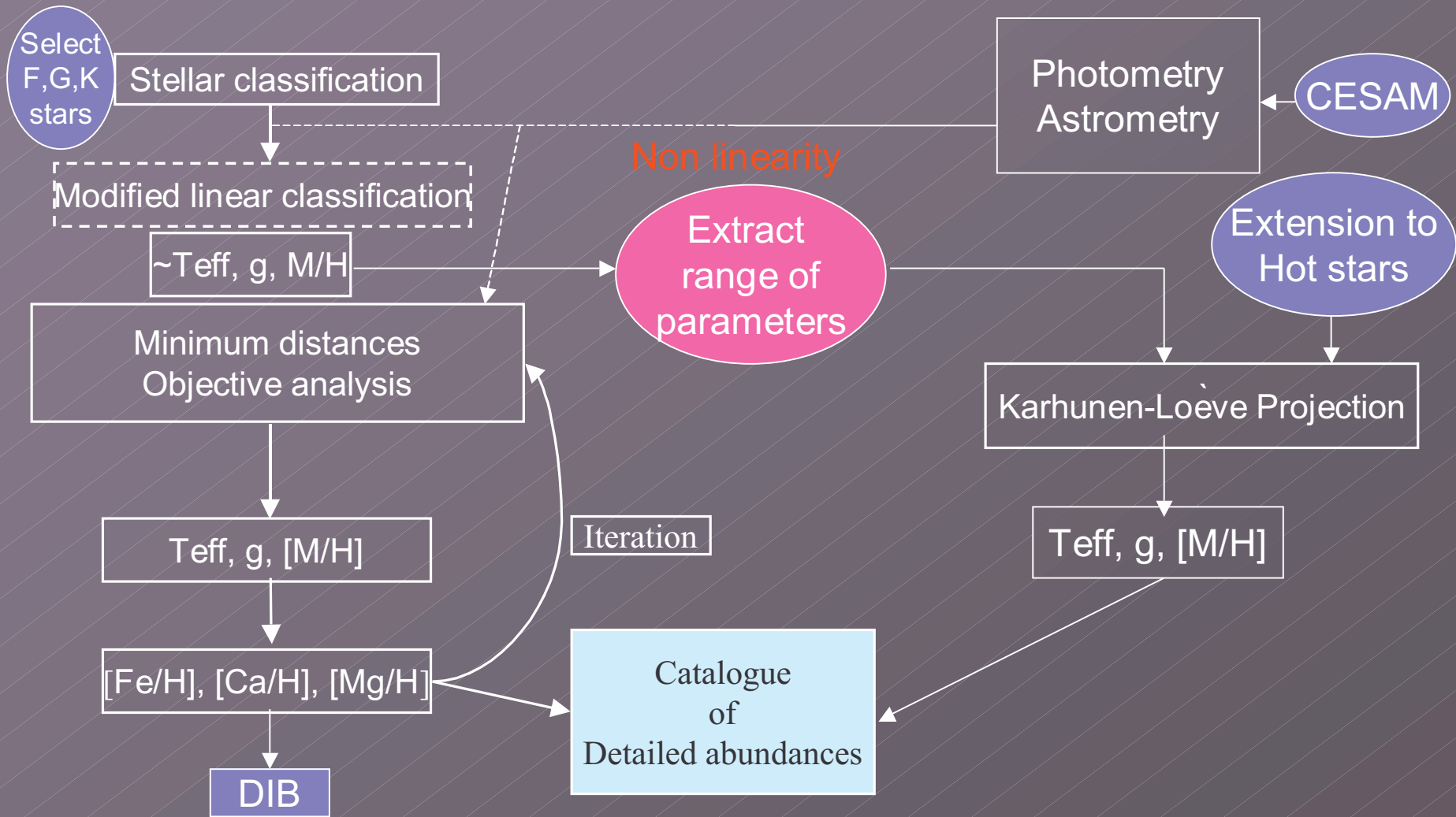
Detailed stellar abundances
and
Tests on the sky

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Some news

- PNPS working group on stellar atmospheric parameters
→ accepted 11 persons
Two parts: the algorithm and the tests
How to perfect the grid of synthetic spectra
Contact with B. Gustafsson
- Tests of algorithms → waiting for a student
- Tests on the sky → in preparation. To be discussed
(part of the subject matter of the PhD)
- NLTE estimates → restarted in november on Fe
Ca in future (PhD), Si and Mg to be done.

The algorithm for Late-Type Stars



Problems with \square turb, rot, macroturbulence

Detailed abundances

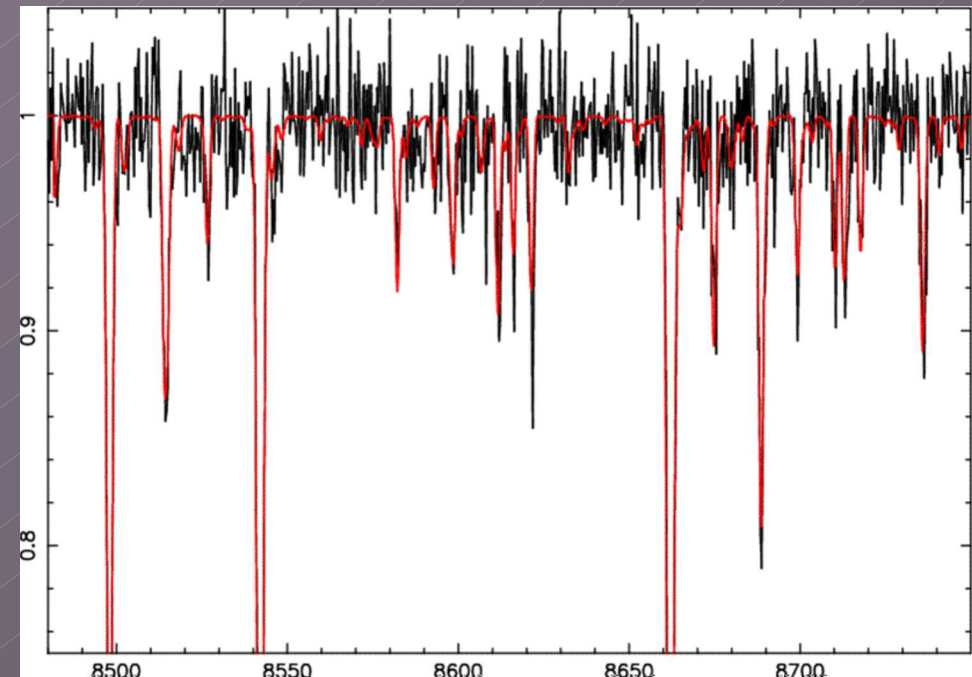
- Among many questions: are we able to measure $[\text{Fe}/\text{H}]$ for all late-type stars? Influence of S/N
→ magnitude limit
- → same tests for Si, Ca and Mg
- Modified MdM or directly from the Karhunen Loeve expansion. Test.

Synthetic spectra

- We suppose that the variation of the stellar abundances of the elements compared to the mixture used for computing spectra has no influence on the determinations of T_{eff} , $\log g$ and $[M/H]$

Example, if $[Ca/Fe]$ very different from what we used for synthetic spectra.

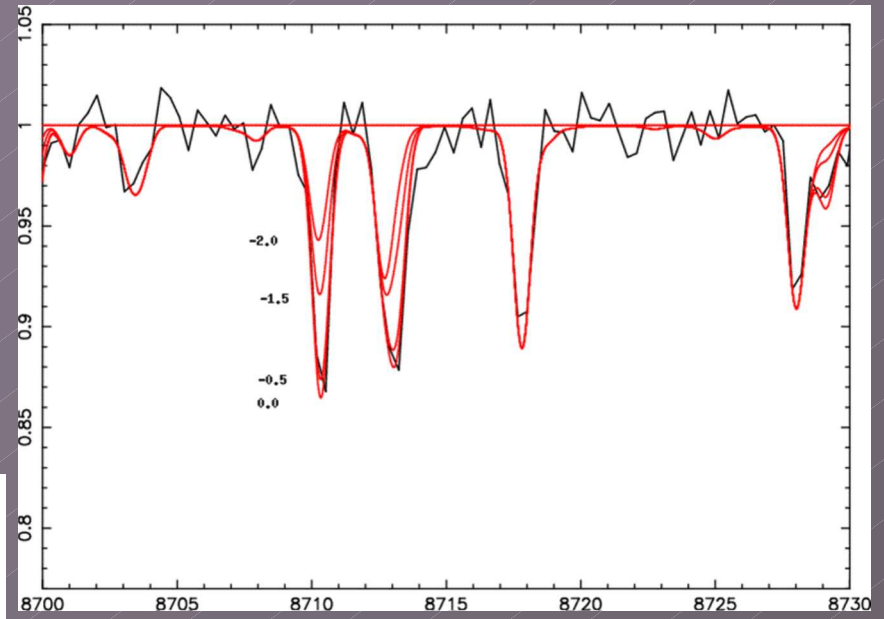
This have to be check



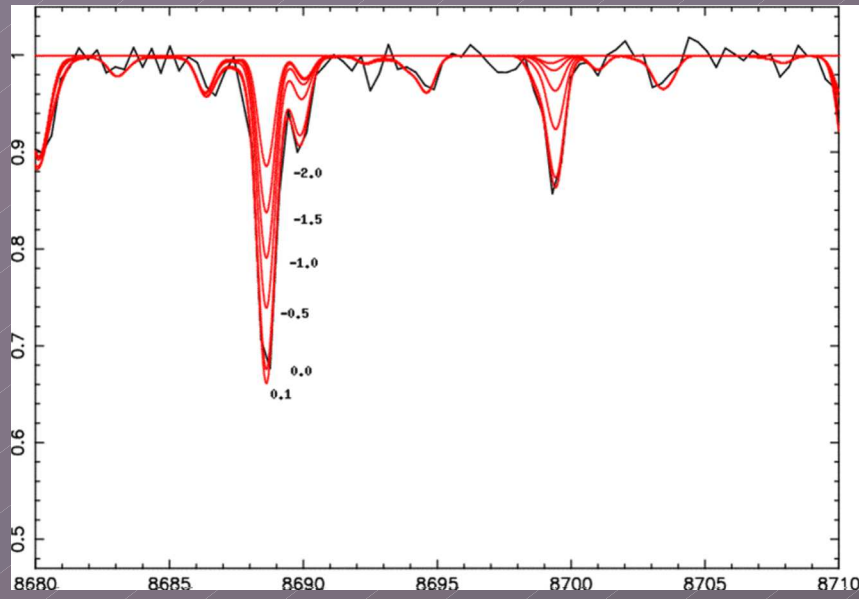
S/N~25

S/N~45

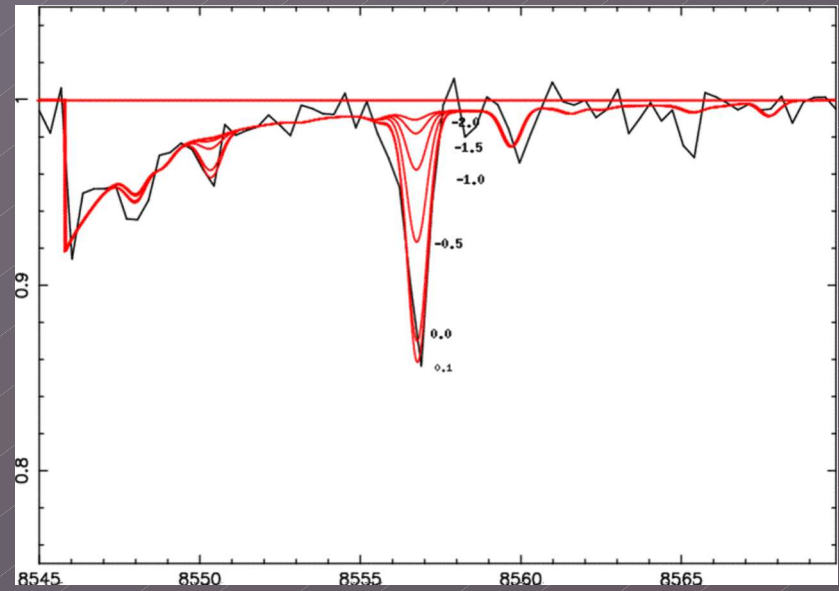
Mg



Fe



Si



Tests on the sky

- We have to learn, we need to have a base for comparison with the ground
- Fields all visible at both CFHT and Paranal
- 3 or 4 color photometry with the TCFH-MEGACAM, astrometry at $0.18''$ and R limit ~ 24.5 . We need only 18.
- Spectrography with GIRAFFE at $R \sim 16,200$ at $8480-9000 \text{ \AA}$ in MEDUSA mode 130 fibers
- Extraction of V_r , T_{eff} , $\log g$, $[M/H]$, $[Fe/H]$, $[Ca/H]$, $[Mg/H]$, $[Si/H]$, σ_{turb} , Rotation
- Is the RVS group OK?

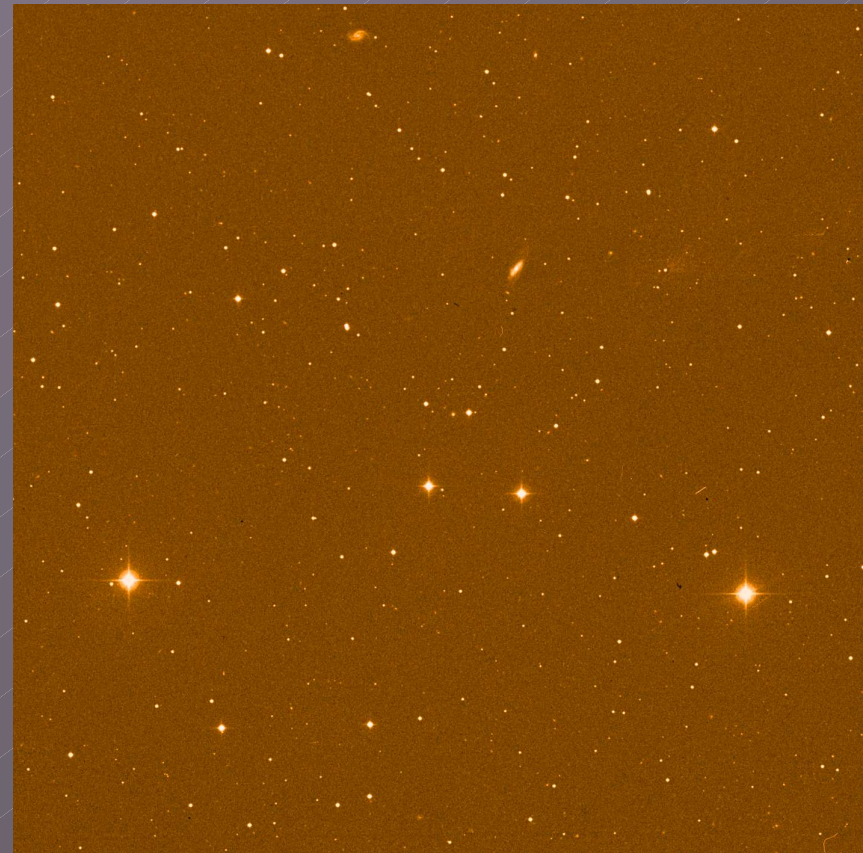
Halo

● SA 94

□□2h 54mn□□□□□□+0° 22'
l= 175.3° b= -49° .2

R_limit ~18 → ~1900
stars

Square ° = 2



40'

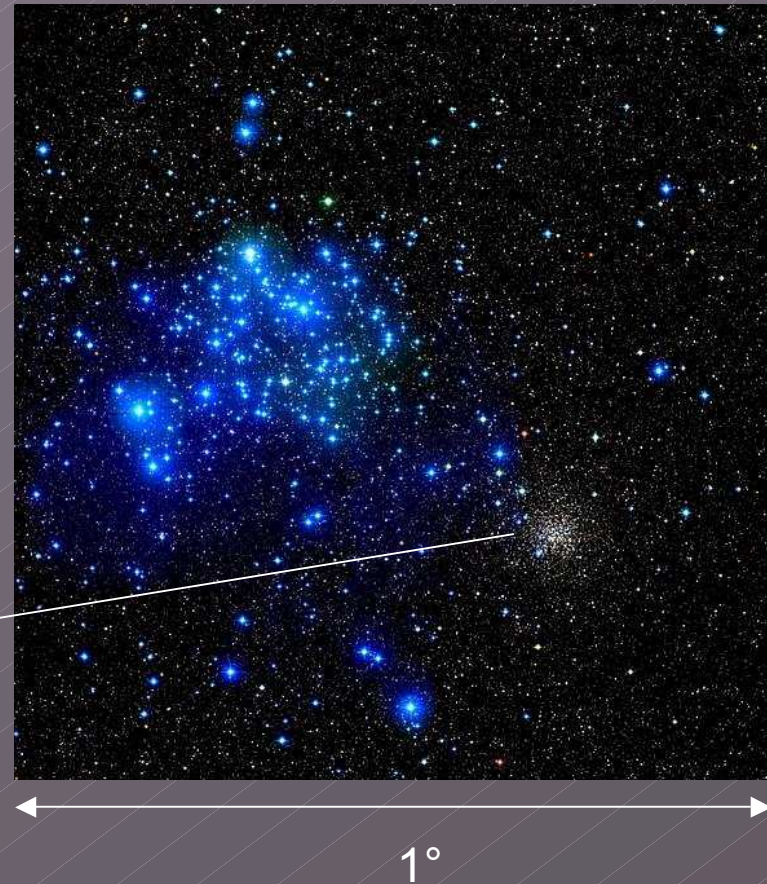
● Anticenter

M35 and NGC 2158

$\alpha = 06^{\text{h}}09^{\text{m}}$

$\delta = +25^{\circ} 44'$

$l = 186.6^{\circ}$ $b = +0.1^{\circ}$



Action

- Prepare the TCFH time telescope request for Halo field. For the end of September
- Prepare tools for astrometry at 0.2" for GIRAFFE
- Prepare the time telescope request at ESO for next year : not urgent
 - Argument for ESO :
 - GAIA preparation
 - Dynamic and chemistry of Halo, Thick Disk and anticenter