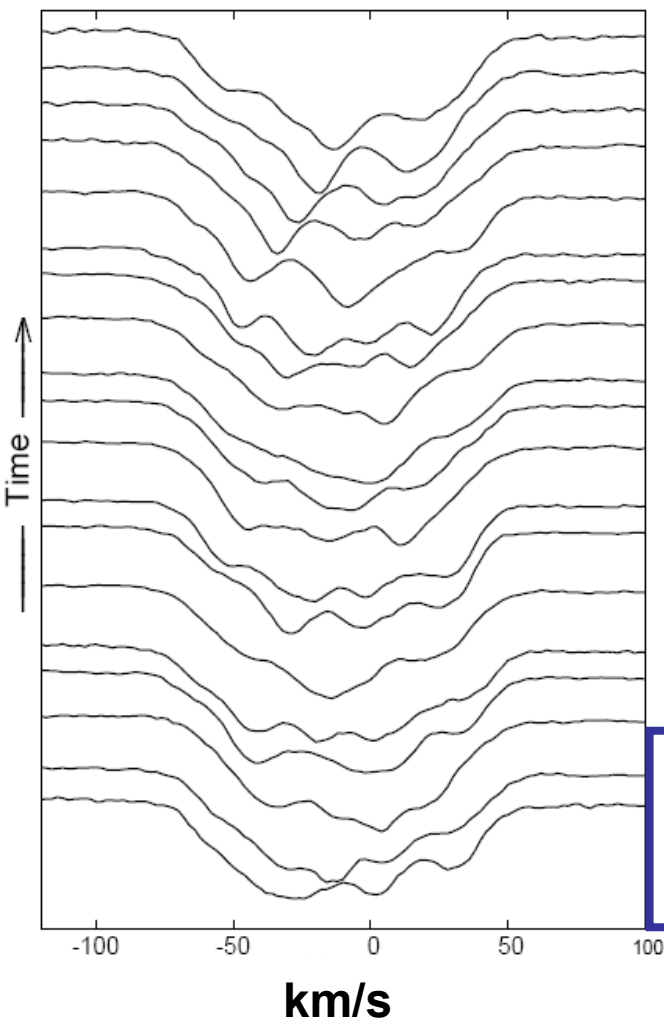


Involvement in the ground-based spectroscopy ESO / OHP / Calar Alto Large Programme

- **Aims**
- **How and who**
- **Current status and near future**

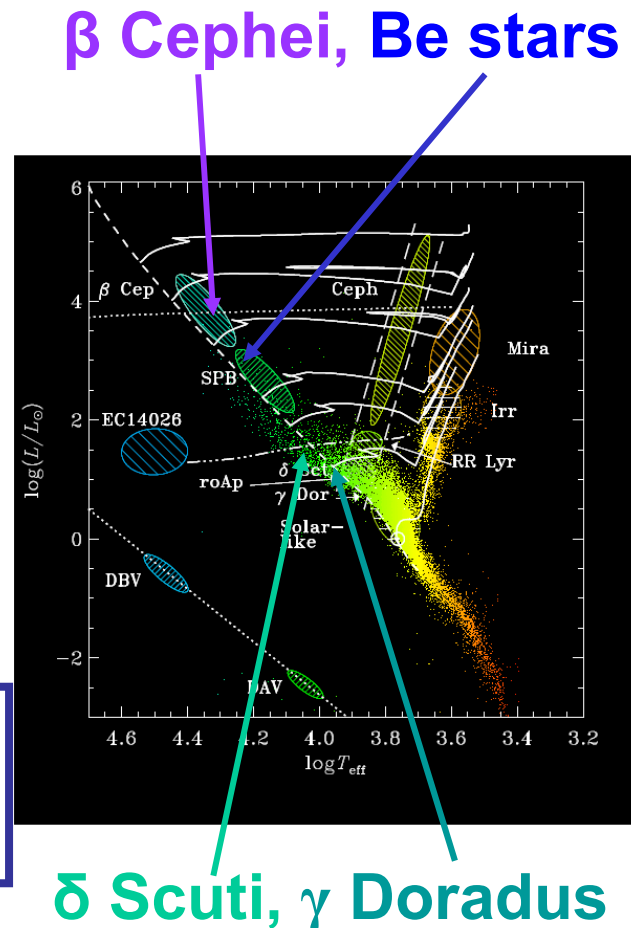
AIMS



Ground-based
multisite
high-resolution
spectra



Mode identification
(l,m)



β Cephei, Be stars

δ Scuti, γ Doradus

AIMS

**Ground-based multisite
high-resolution spectroscopic observations**



- 1. Identification of m-values to the detected modes**
- 2. Detection of high-degree l modes**
- 3. Help in the identification of low-degree modes**

Perfectly fitting the expertise of the KULeuven team!



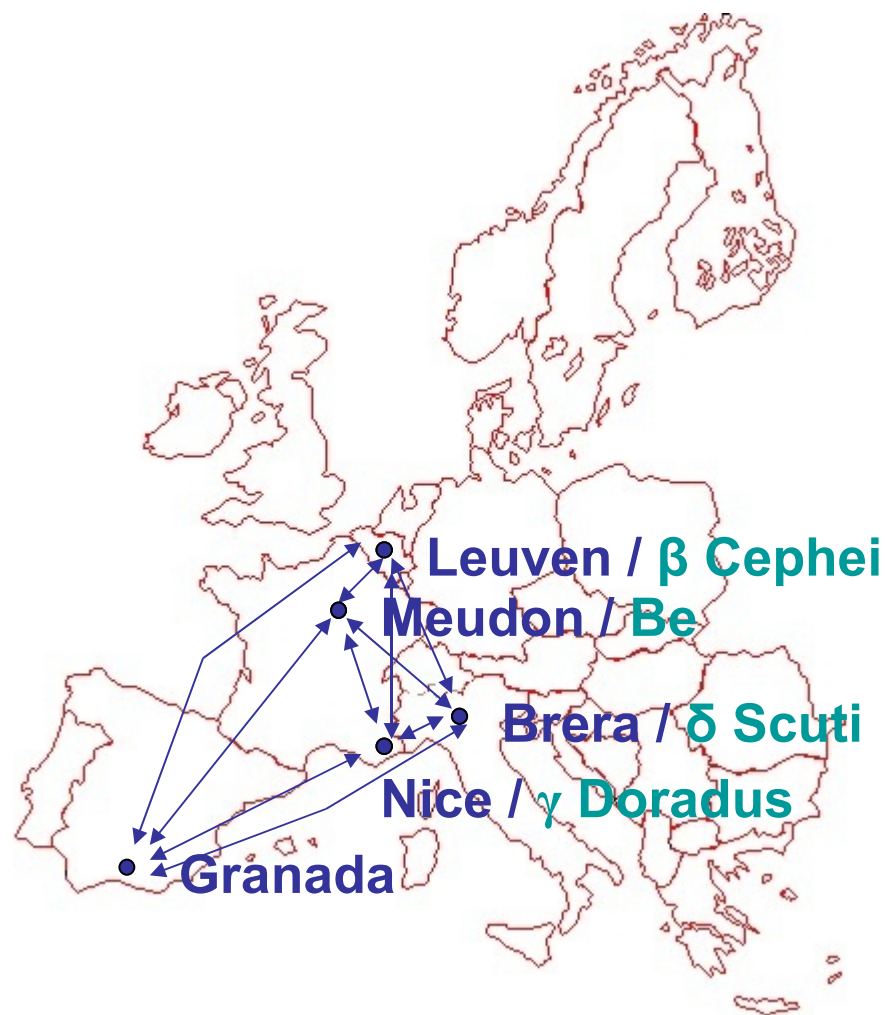
HOW and WHO

1. Teams

2. Instruments and runs

3. Data analysis techniques

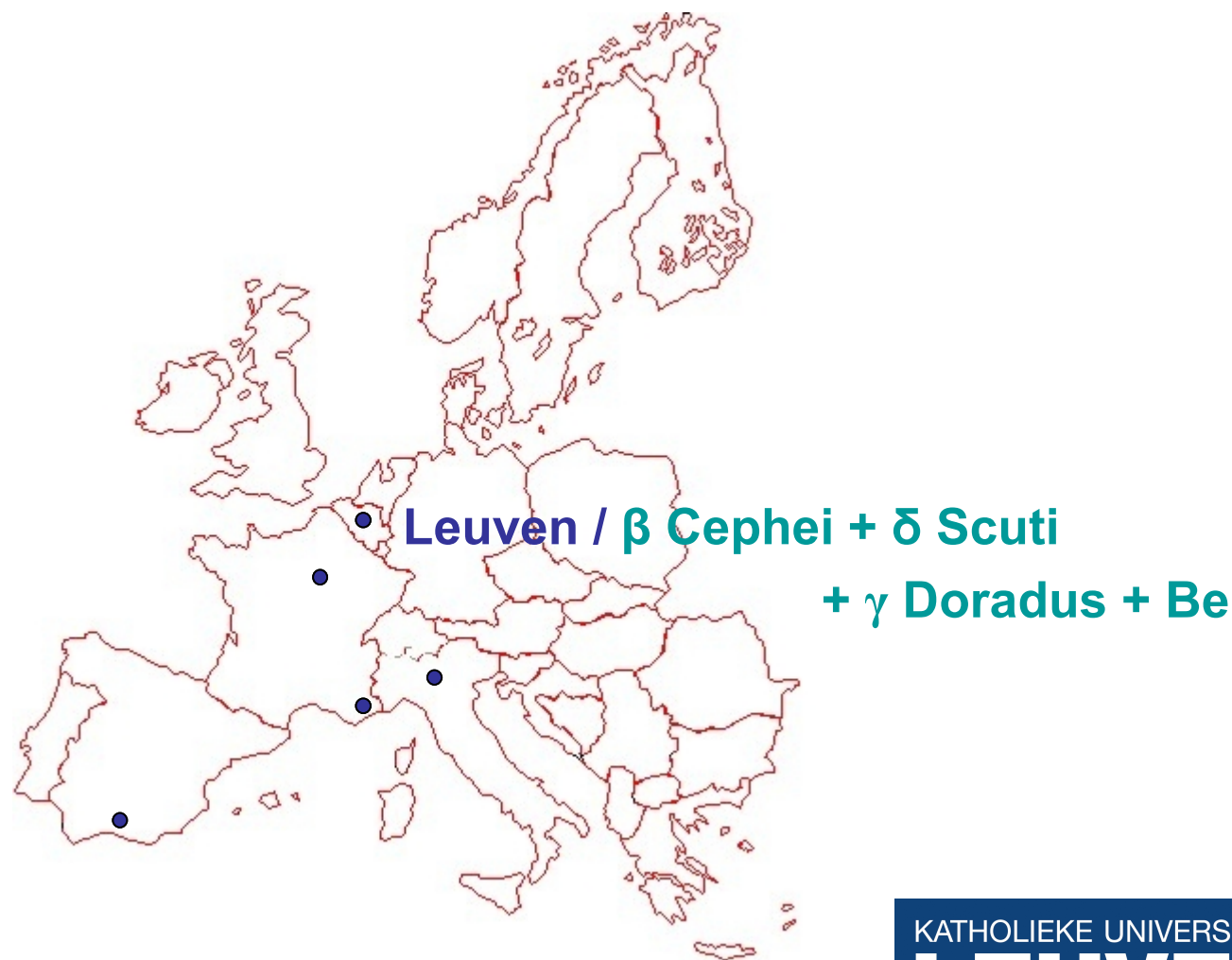
HOW and WHO



Share know-how

Duplicate
independent
analyses
for the same star

HOW and WHO



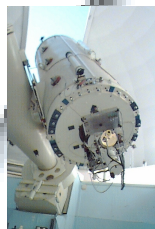
INSTRUMENTS and RUNS



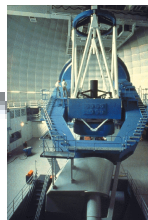
INSTRUMENTS and RUNS



FEROS@2.2m
at La Silla
Ennio Poretti



FOCES@2.2m at Calar Alto
Pedro Amado

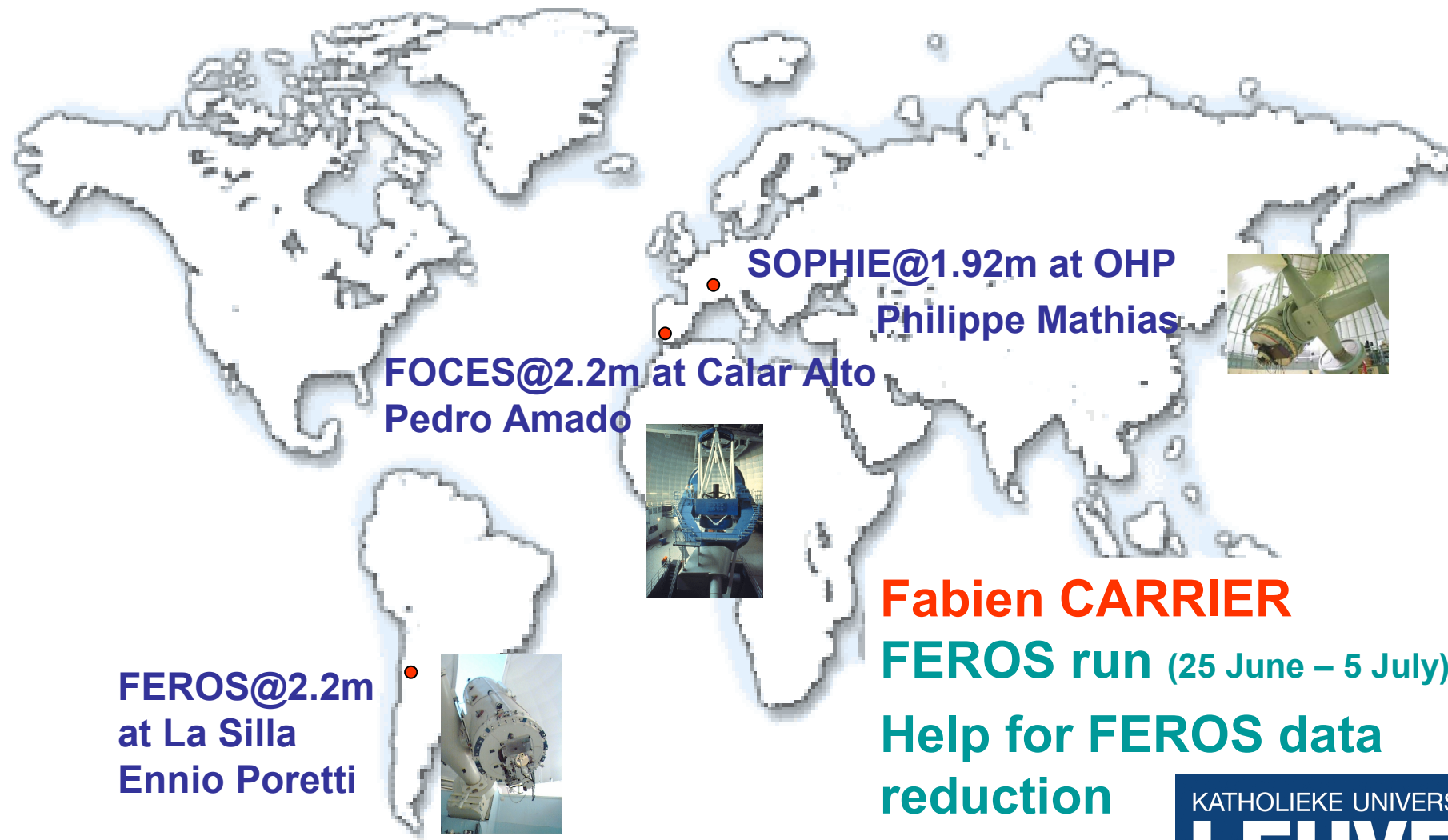


SOPHIE@1.92m at OHP
Philippe Mathias



First run: Winter 2006-07
Data analyses ongoing
Second run: Summer 2007

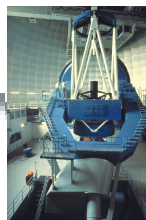
INSTRUMENTS and RUNS



SOPHIE@1.92m at OHP
Philippe Mathias



FOCES@2.2m at Calar Alto
Pedro Amado



FEROS@2.2m
at La Silla
Ennio Poretti



Fabien CARRIER
FEROS run (25 June – 5 July)
Help for FEROS data
reduction

DATA ANALYSIS TECHNIQUES

Spectroscopic Mode Identification

- Moment method
- Pixel-by-pixel method
- Line-profile fitting technique

developed by

**Conny AERTS, Joris DE RIDDER,
Maryline BRIQUET and Wolfgang ZIMA**

CURRENT STATUS

First run (Winter 2006-07)

Wolfgang ZIMA

IR01

Star	V	Sp.	Notes
HD 50747	5.45	A4	SB2
HD 49933	5.78	F2V	Solar-like; double system
HD 50890	6.03	G6	Giant
HD 50820	6.27	B3IV	Be, SB2
HD 50170	6.86	F2	
HD 51106	7.35	A3m	SB2
HD 50846	8.43	B5	Eclip. (Hipparcos variable)
HD 50844	9.09	A2	δ Sct, $v \sin i=65\text{km s}^{-1}$
HD 50773	9.36	A2	
HD 292790	9.48	F8	Low S/N spectrum in GAUDI

δ Scuti

γ Doradus

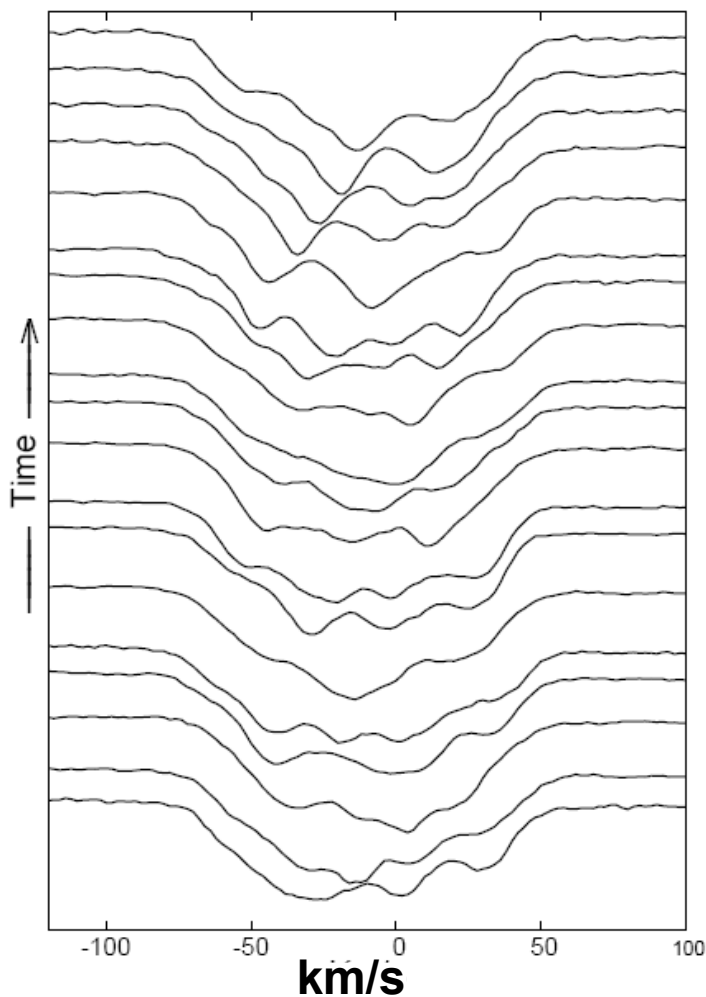
Star	V	Sp.	Notes
HD 49434	5.75	F1V	γ Dor, $v \sin i=89\text{km s}^{-1}$
HD 49933	5.78	F2V	Solar-like; double system
HD 49294	7.02	A2	$v \sin i=111\text{km s}^{-1}$
HD 49385	7.42	G0	$v \sin i=8\text{km s}^{-1}$, solar-like
HD 49808	7.98	F0V	$v \sin i=114\text{km s}^{-1}$
HD 50064	8.21	B6Ia	Low S/N spectrum in GAUDI
HD 50209	8.36	B9Ve	Be, $v \sin i=200\text{km s}^{-1}$
HD 49330	8.95	B0e	Be, V739 Mon
HD 50230	8.95	B3	Low S/N spectrum in GAUDI
HD 49862	9.47	A5p	Low S/N spectrum in GAUDI

LRa1

HD 50844 – δ Scuti star – IR01/LRa1

Wolfgang ZIMA

Night of January 6th, 2007



225 high-resolution echelle
FEROS@2.2m spectra
covering 96 hours

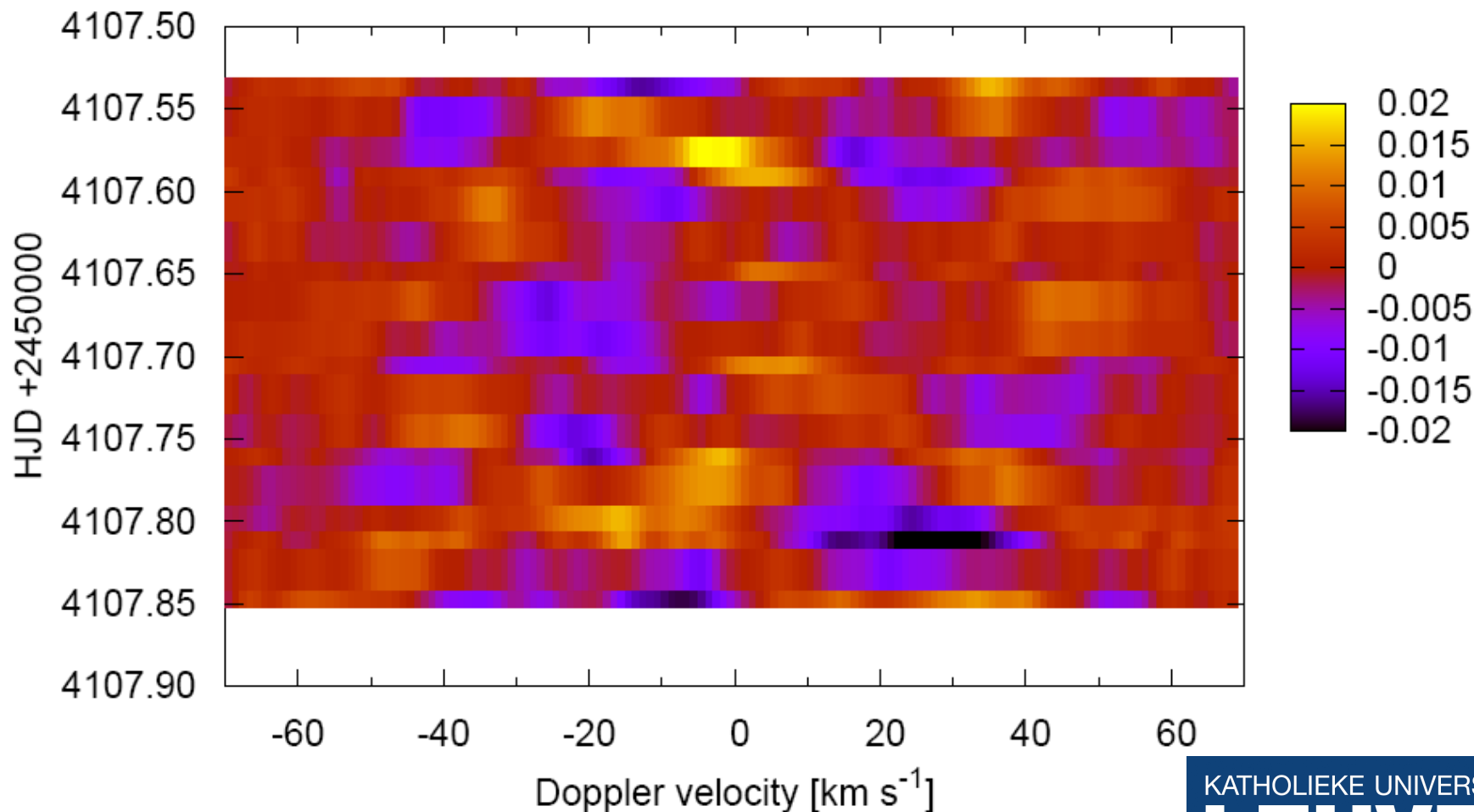
S/N: 70 – 200

Wavelength range: 3500 – 8800 Å

9 selected unblended lines
are combined \longrightarrow S/N of ~ 500

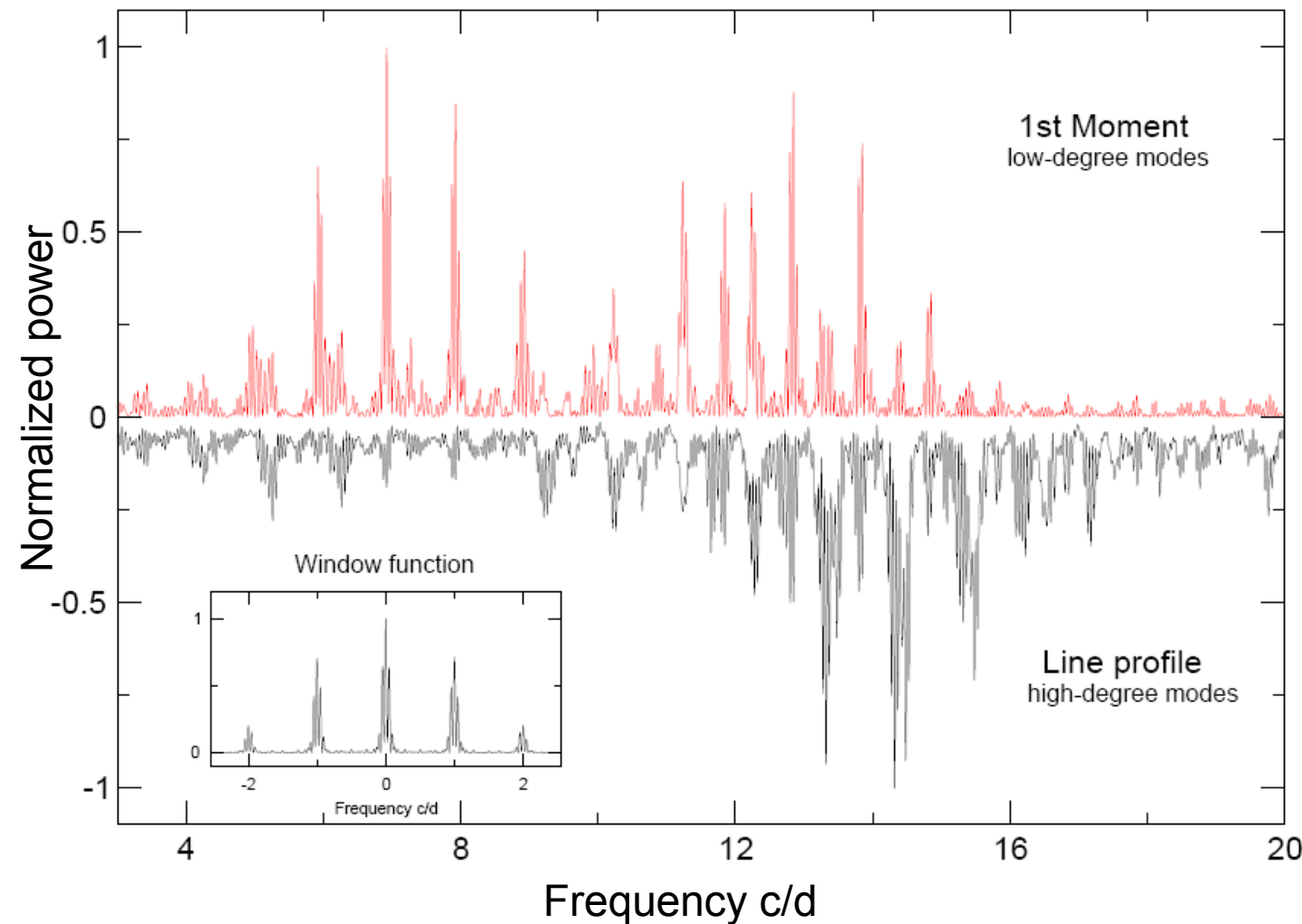
HD 50844 – δ Scuti star – IR01/LRa1

Wolfgang ZIMA



HD 50844 – δ Scuti star – IR01/LRa1

Wolfgang ZIMA



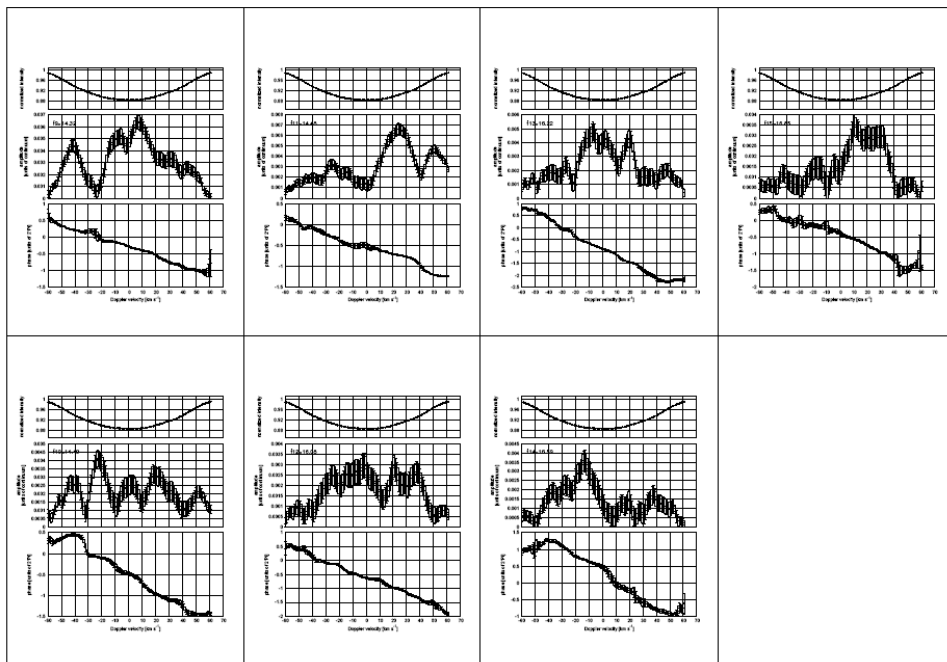
15 frequencies
between
5 and 17 c d^{-1}

RV amplitude
between
0.2 and 0.7 km s^{-1}

HD 50844 – δ Scuti star – IR01/LRa1

Wolfgang ZIMA

Most of the modes
apparently prograde



I-values up to 10

KATHOLIEKE UNIVERSITEIT
LEUVEN

NEAR FUTURE

Second run (Summer 2007)

LRc1

HD 181555 δ Scuti

ESO – OHP – Calar Alto

→ Wolfgang ZIMA

HD 180642 β Cephei

ESO – OHP

→ Maryline BRIQUET

HD 181231 Be

ESO

Involvement in the ground-based spectroscopy ESO / OHP / Calar Alto Large Programme

