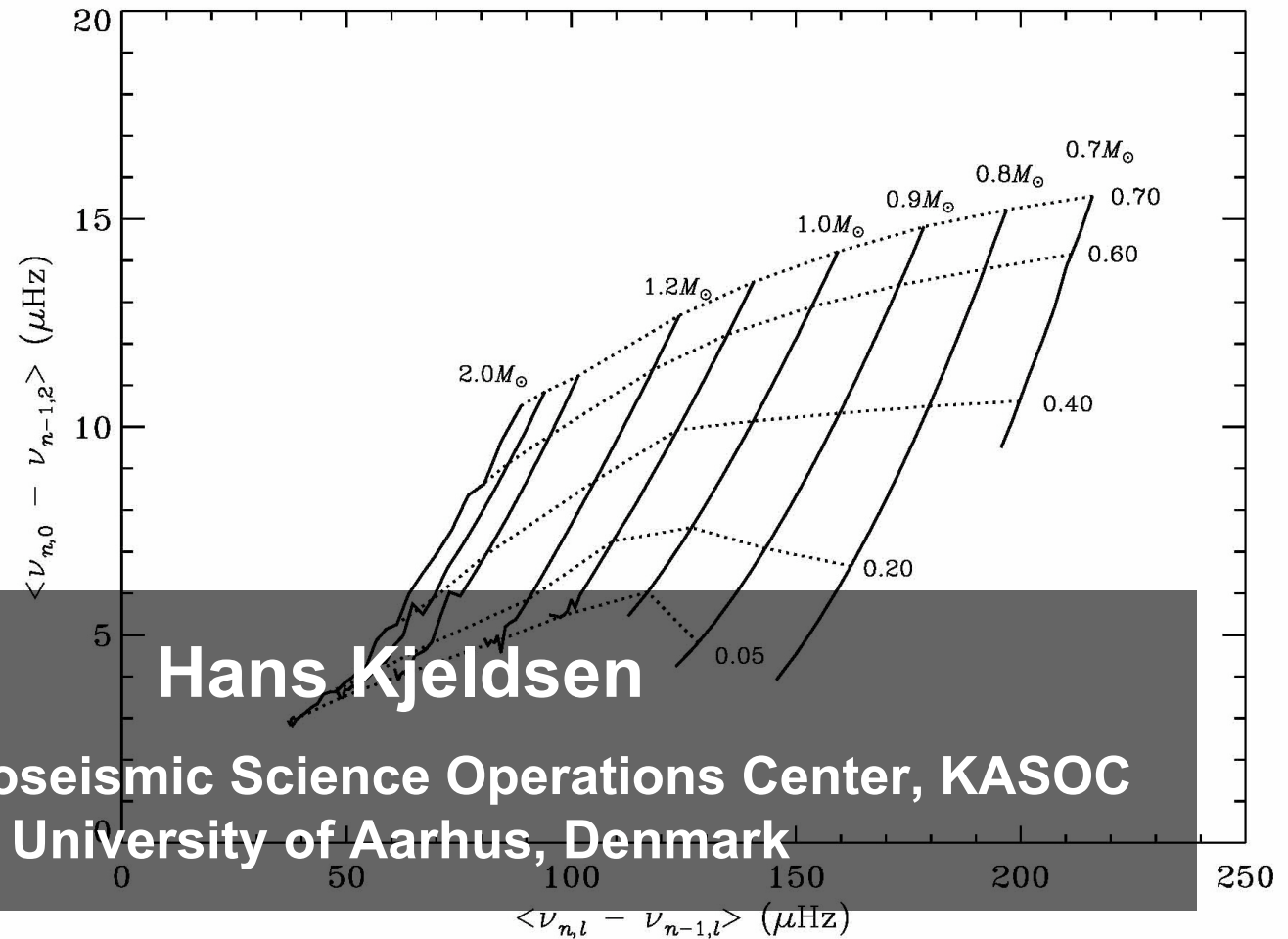
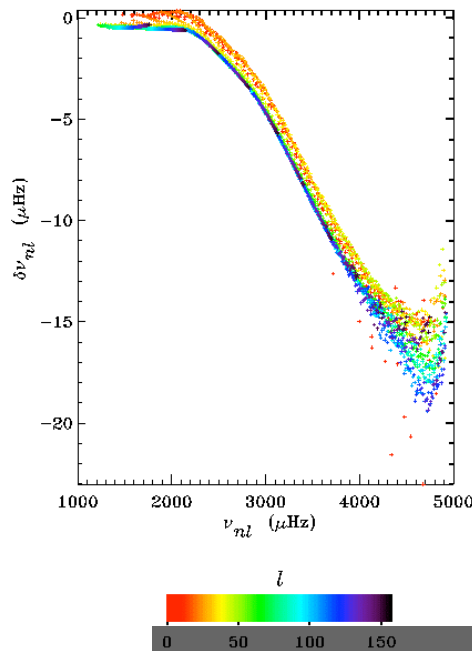


Development and verification of data interpretation pipeline:

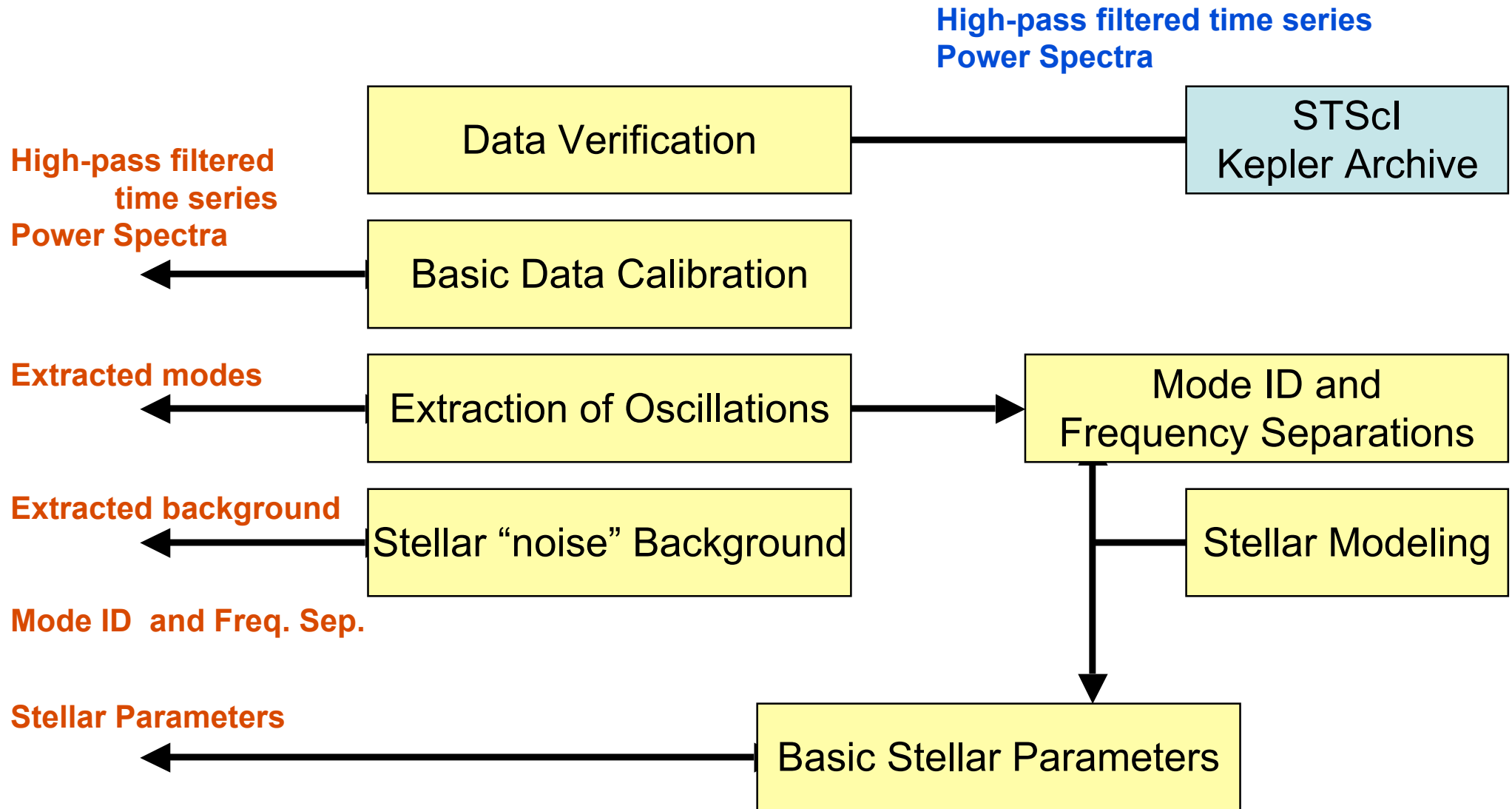


Hans Kjeldsen

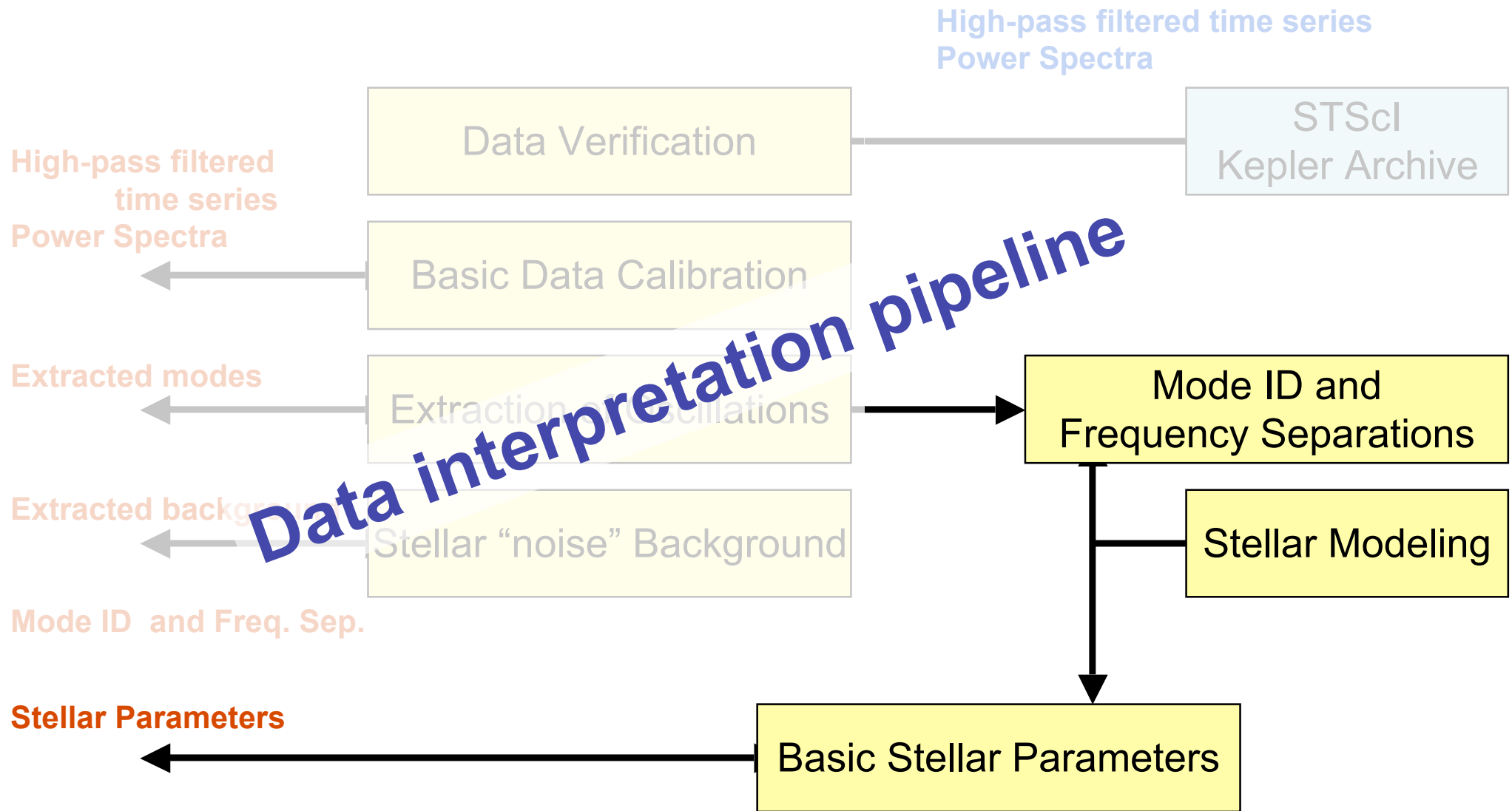
Kepler Asteroseismic Science Operations Center, KASOC
University of Aarhus, Denmark

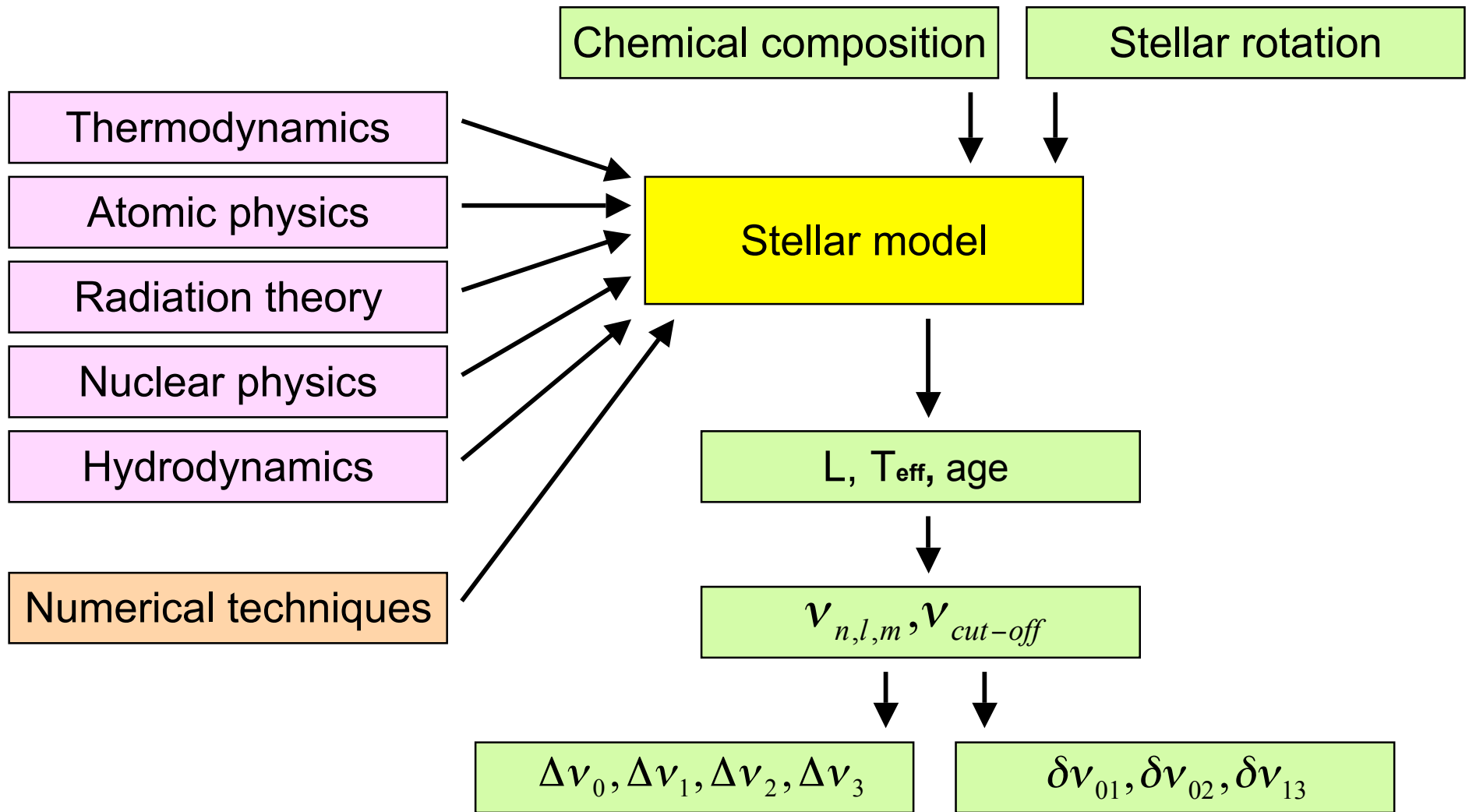
$$\nu_{n,l} \approx \Delta\nu \cdot (n + l/2 + \varepsilon) - (l+1) \cdot l \cdot D_0$$

Data Analysis at KASOC

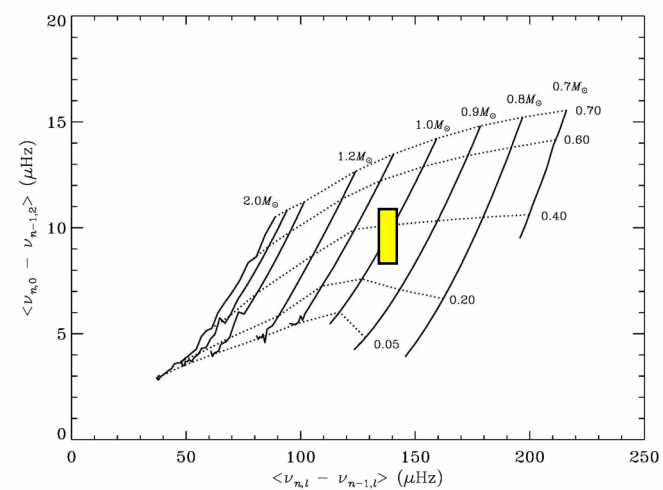
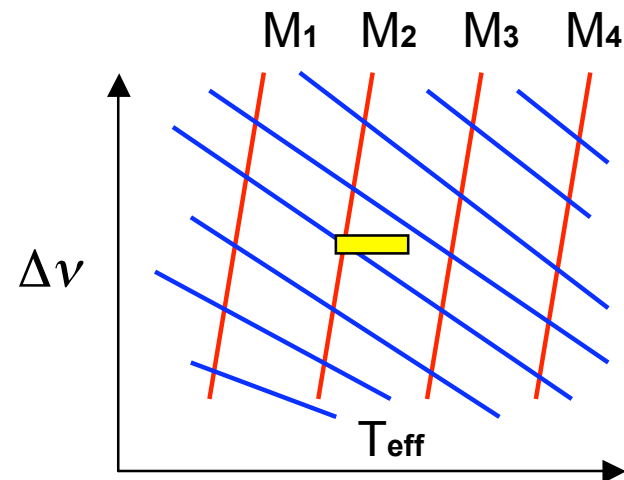
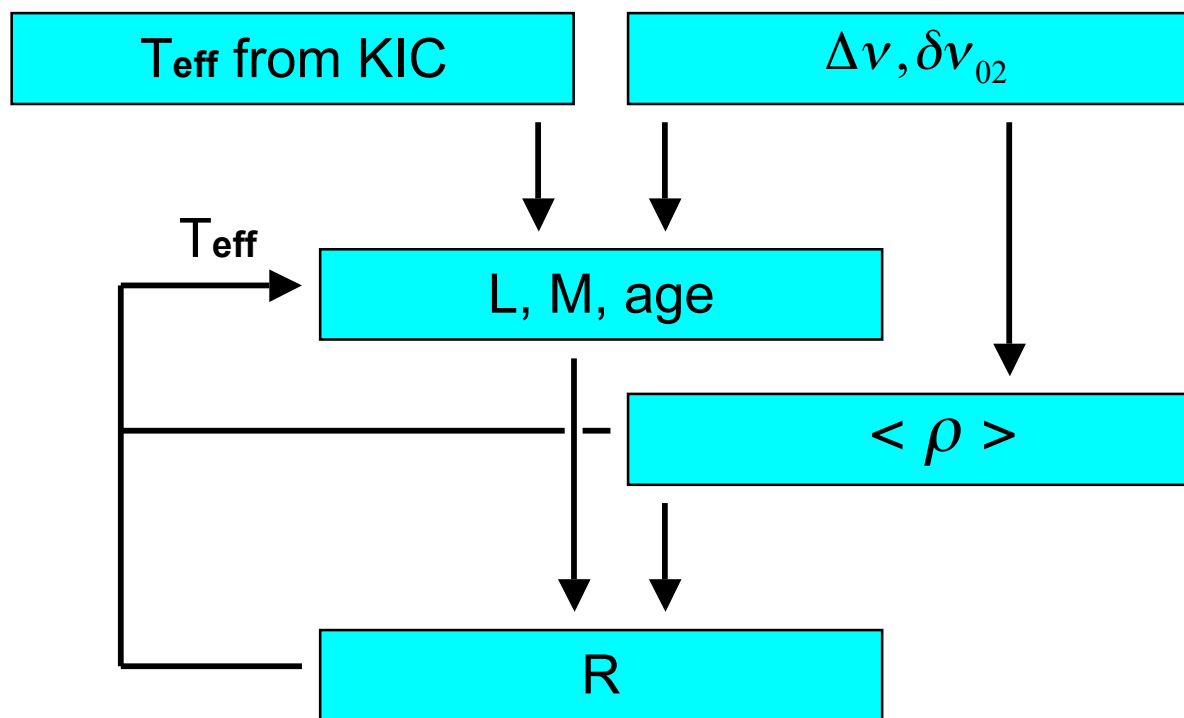


Data Analysis at KASOC

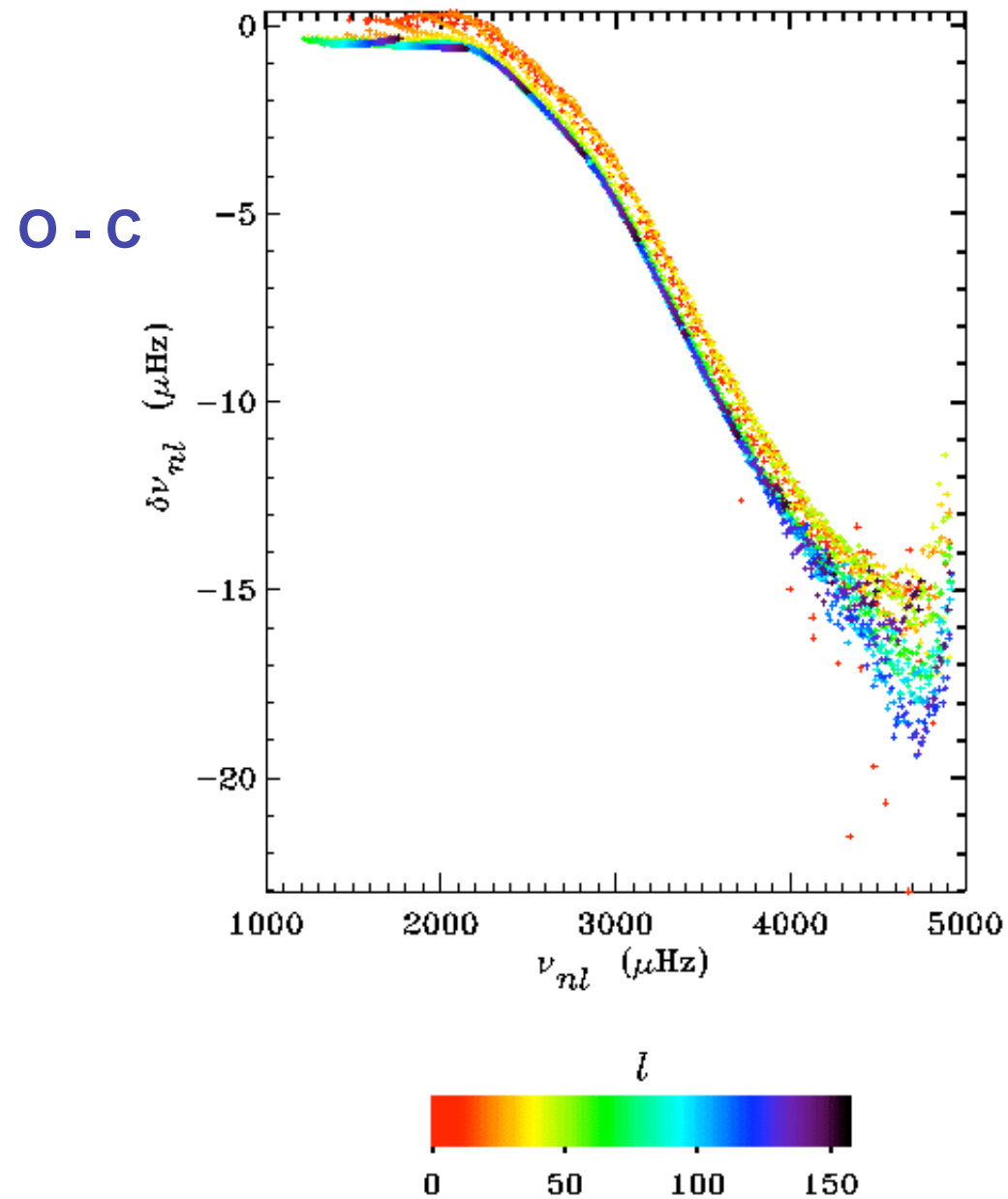




$$\nu_{n,l} \approx \Delta\nu \cdot (n + l / 2 + \varepsilon) - (l + 1) \cdot l \cdot D_0$$



The Surface Offset



The Surface Offset

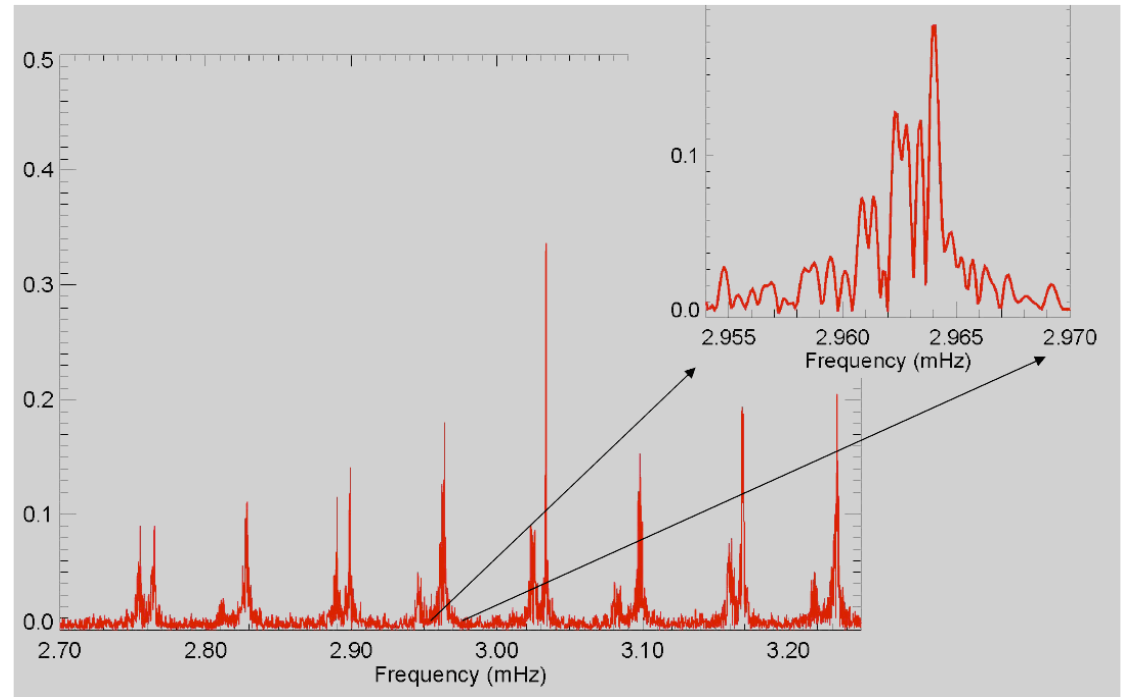
$$v_n \propto \sqrt{\rho}$$

$$\Delta v_0 \propto \sqrt{\rho}$$

The Surface Offset

$$\nu_n \propto \sqrt{\rho}$$

$$\Delta \nu_0 \propto \sqrt{\rho}$$

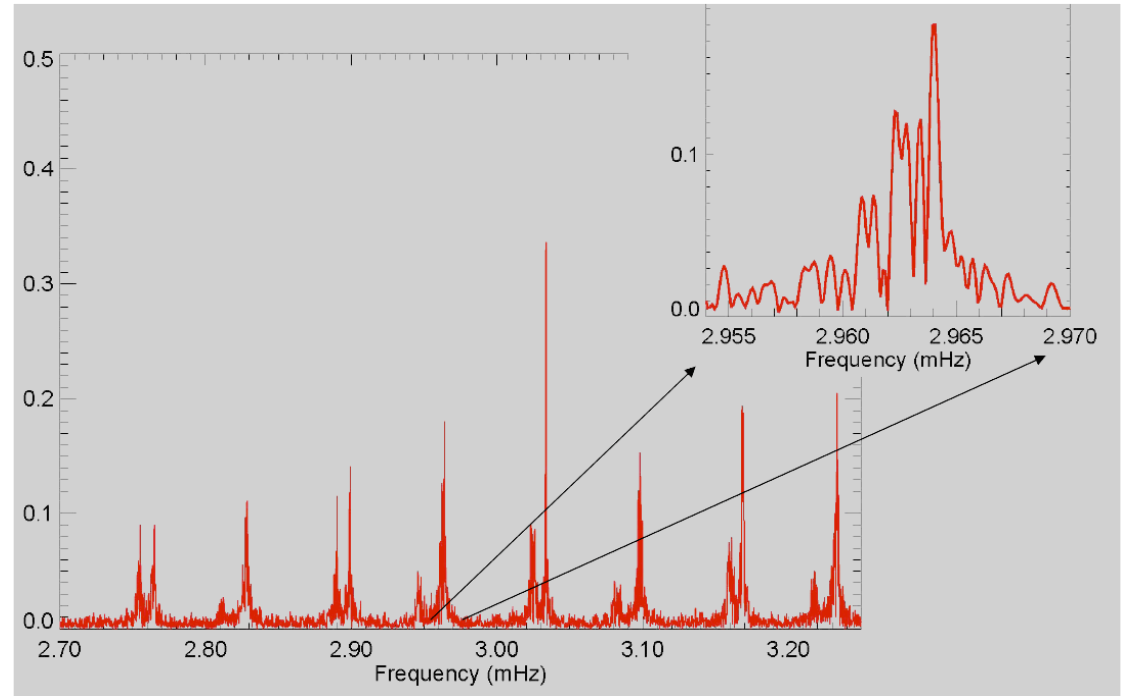


	MODEL S	GOLF	radial order, n
1. Frequency (f)	3038.95	3034.15	17-25 (21)
2. Large separation	135.855	134.810	17-25 (21)
3. $f(n=17)$	2497.35	2496.04	17
4. $f(n=13)$	1957.46	1957.45	13

The Surface Offset

$$\nu_n \propto \sqrt{\rho}$$

$$\Delta \nu_0 \propto \sqrt{\rho}$$



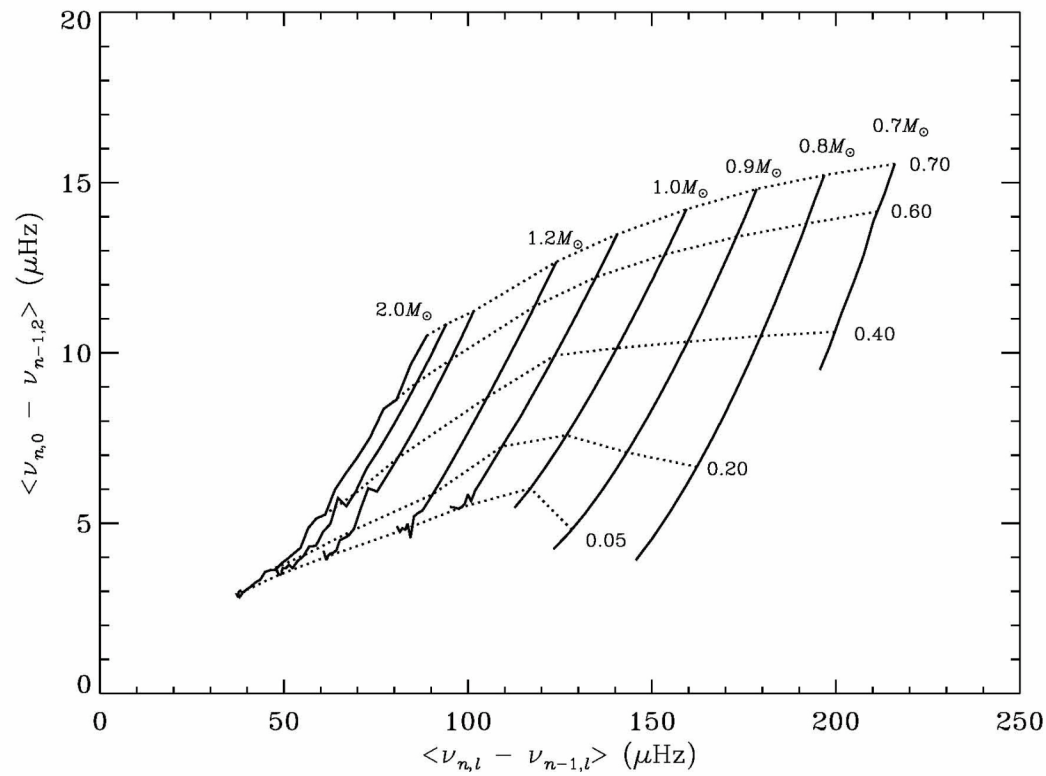
	MODEL S	GOLF	
1. Frequency (f)	3038.95	3034.15	0.16 %
2. Large separation	135.855	134.810	0.78 %
3. $f(n=17)$	2497.35	2496.04	0.05 %
4. $f(n=13)$	1957.46	1957.45	0.0005 %

Stellar surface effective temperature from KIC colours.

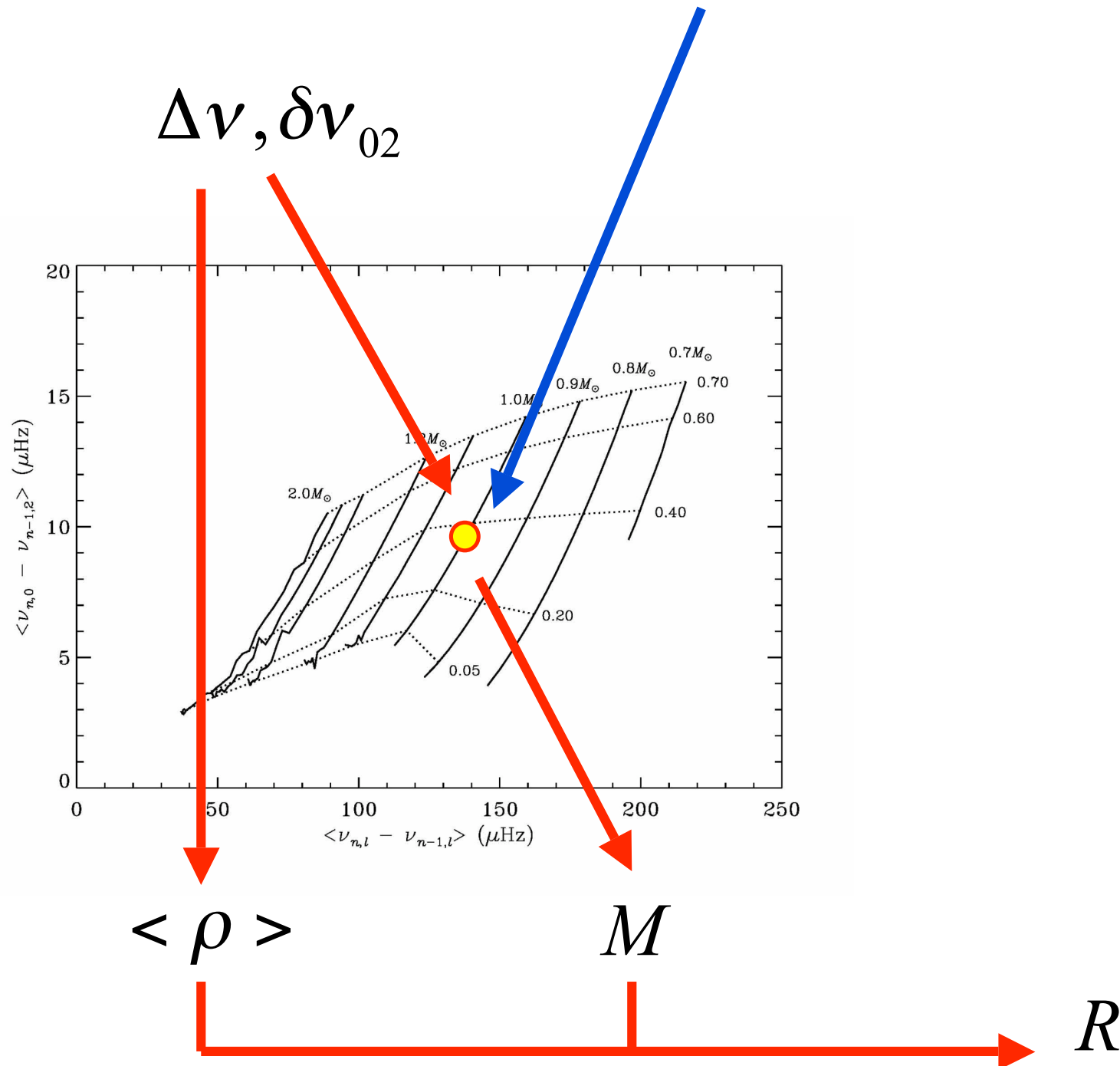
$$\Delta\nu, \delta\nu_{02}$$

Stellar surface effective temperature from KIC colours.

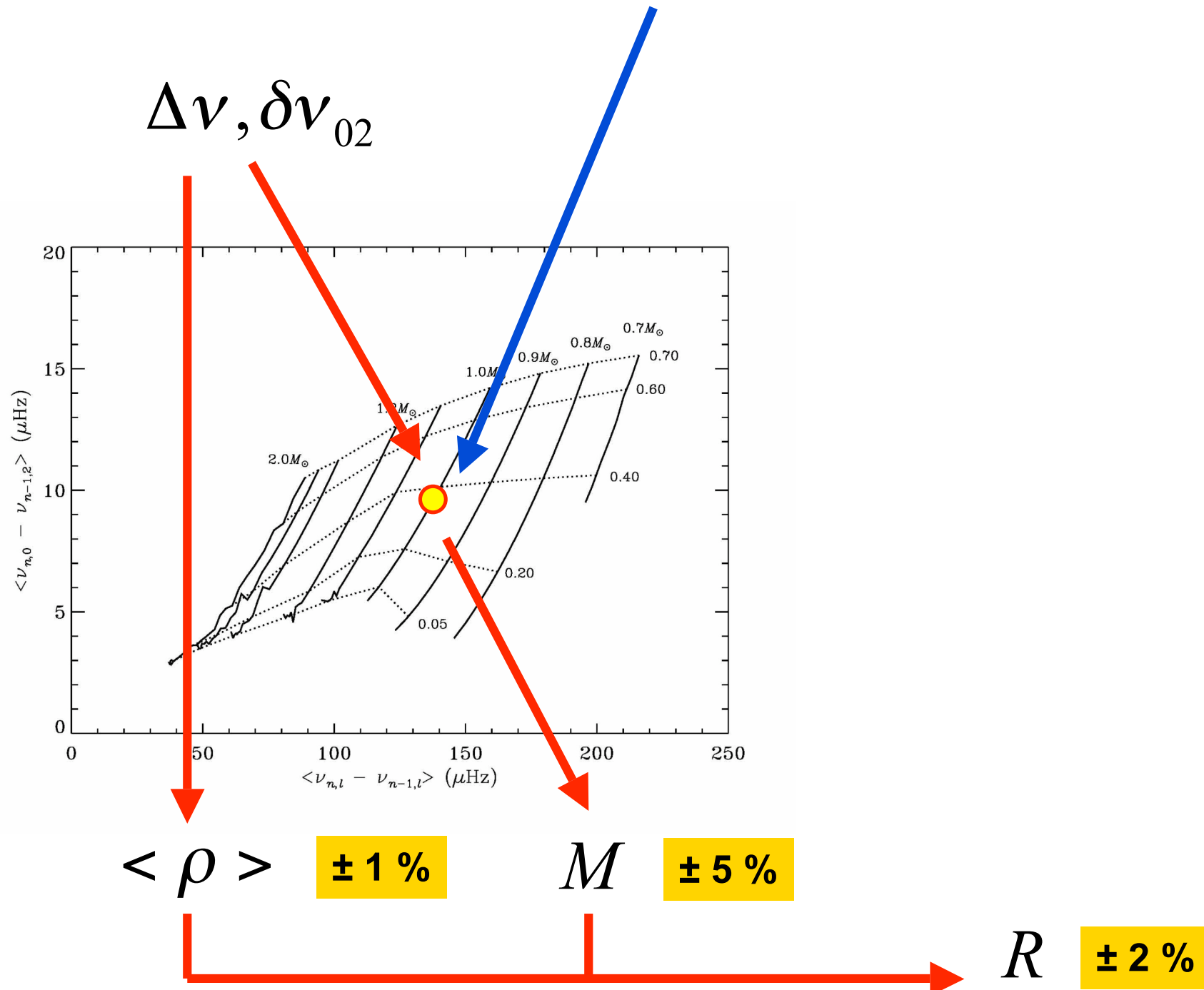
$$\Delta\nu, \delta\nu_{02}$$



Stellar surface effective temperature from KIC colours.



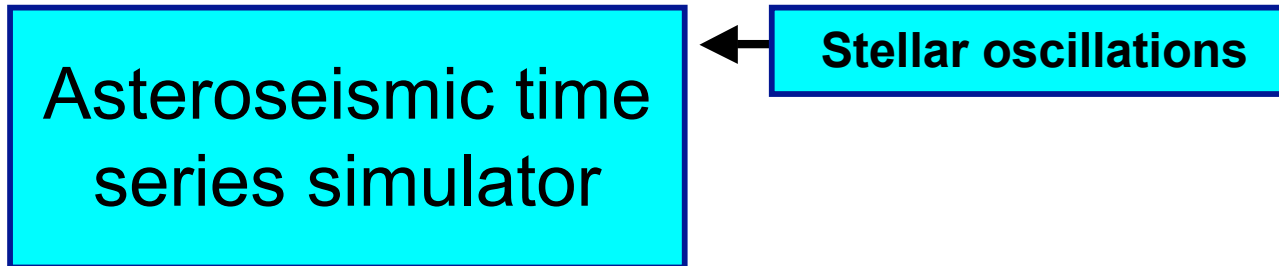
Stellar surface effective temperature from KIC colours.



Simulations show that we are able to reach a high precision in the determinations of stellar radii (relative accuracy below 2-3 per cent) and ages (better than 5-10 per cent of the total main sequence lifetime).

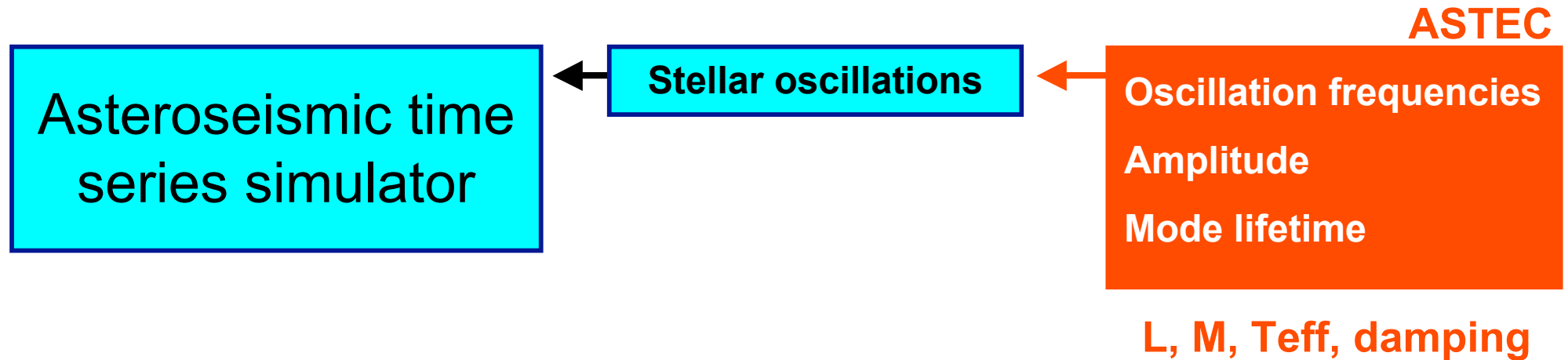
Time series simulator and pipeline SW

Constructing pipeline analysis tools for asteroseismic targets



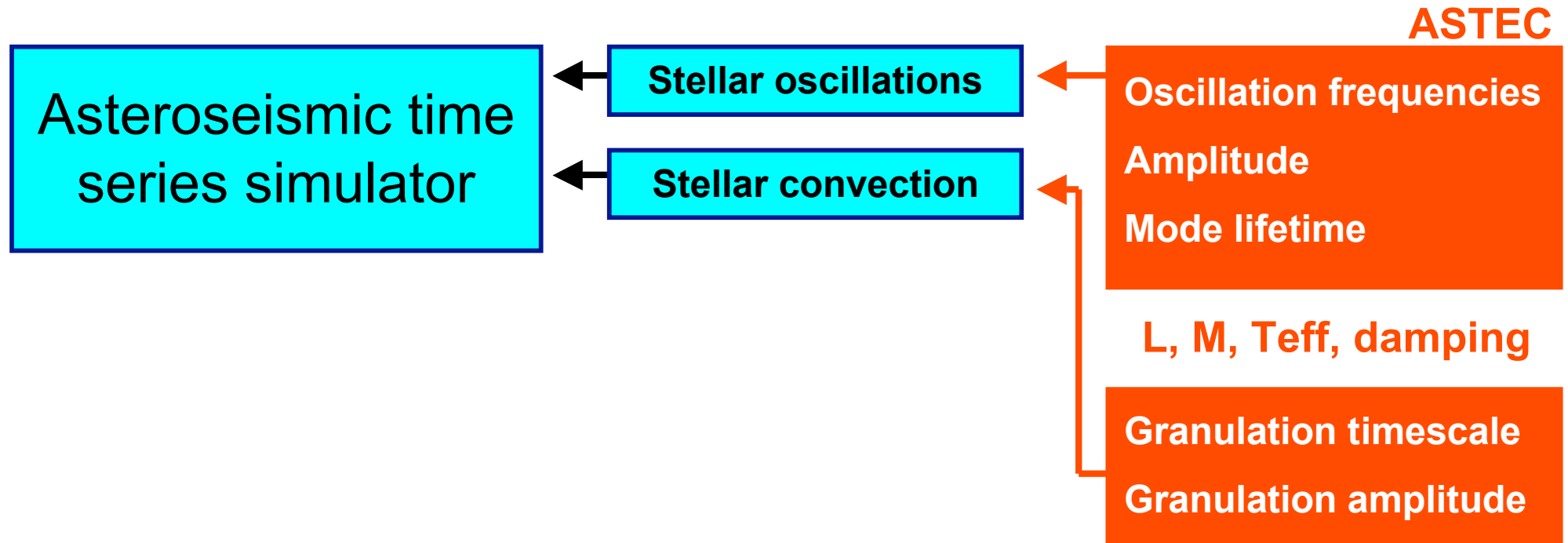
Time series simulator and pipeline SW

Constructing pipeline analysis tools for asteroseismic targets



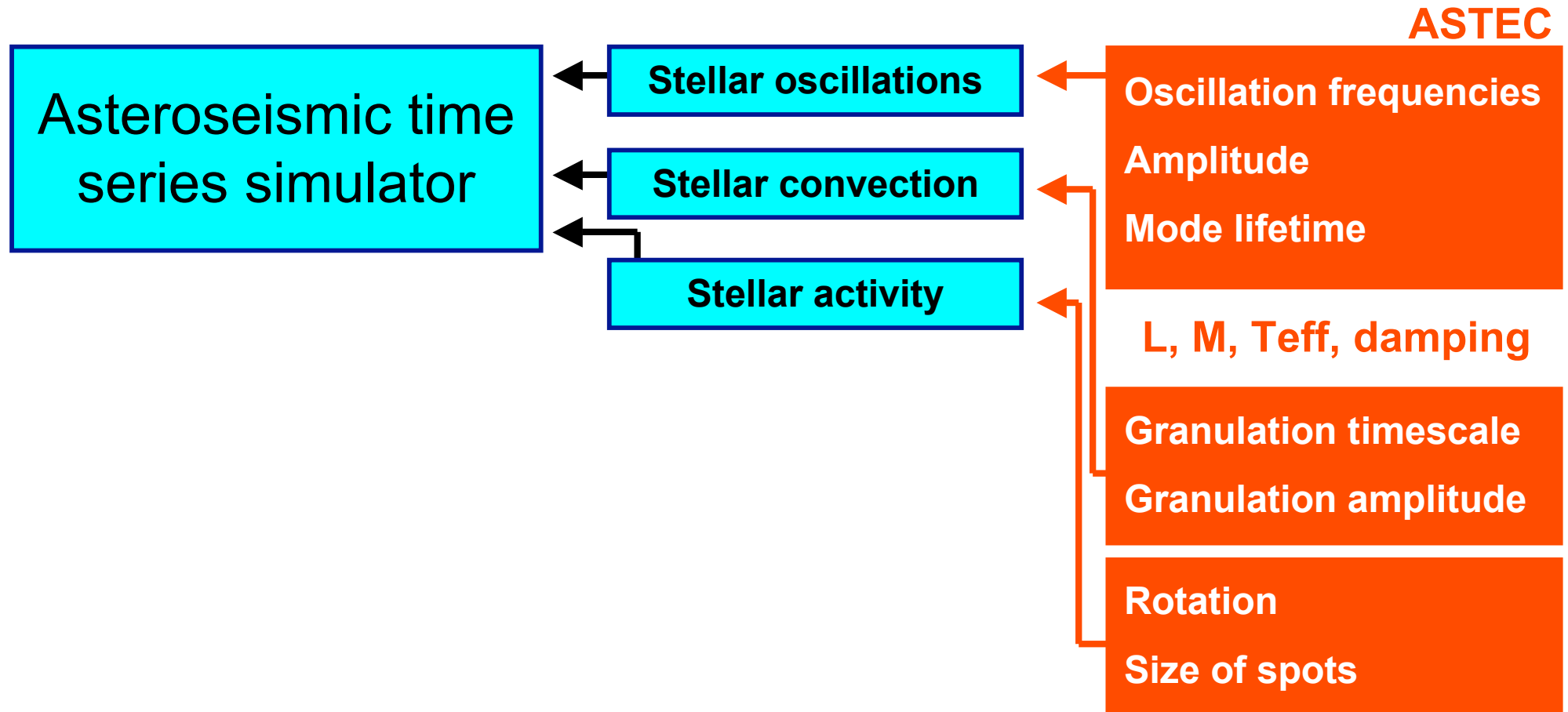
Time series simulator and pipeline SW

Constructing pipeline analysis tools for asteroseismic targets



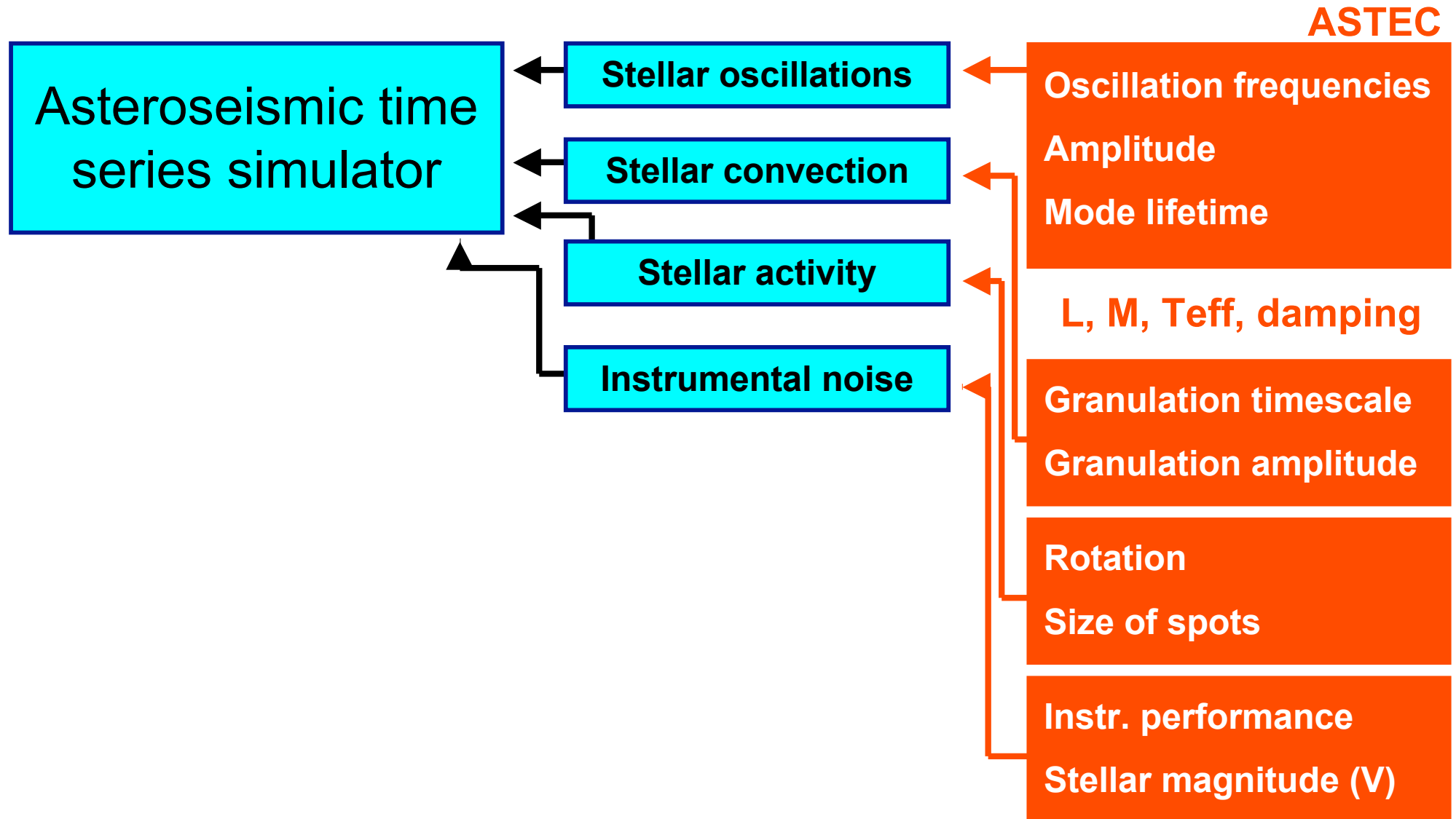
Time series simulator and pipeline SW

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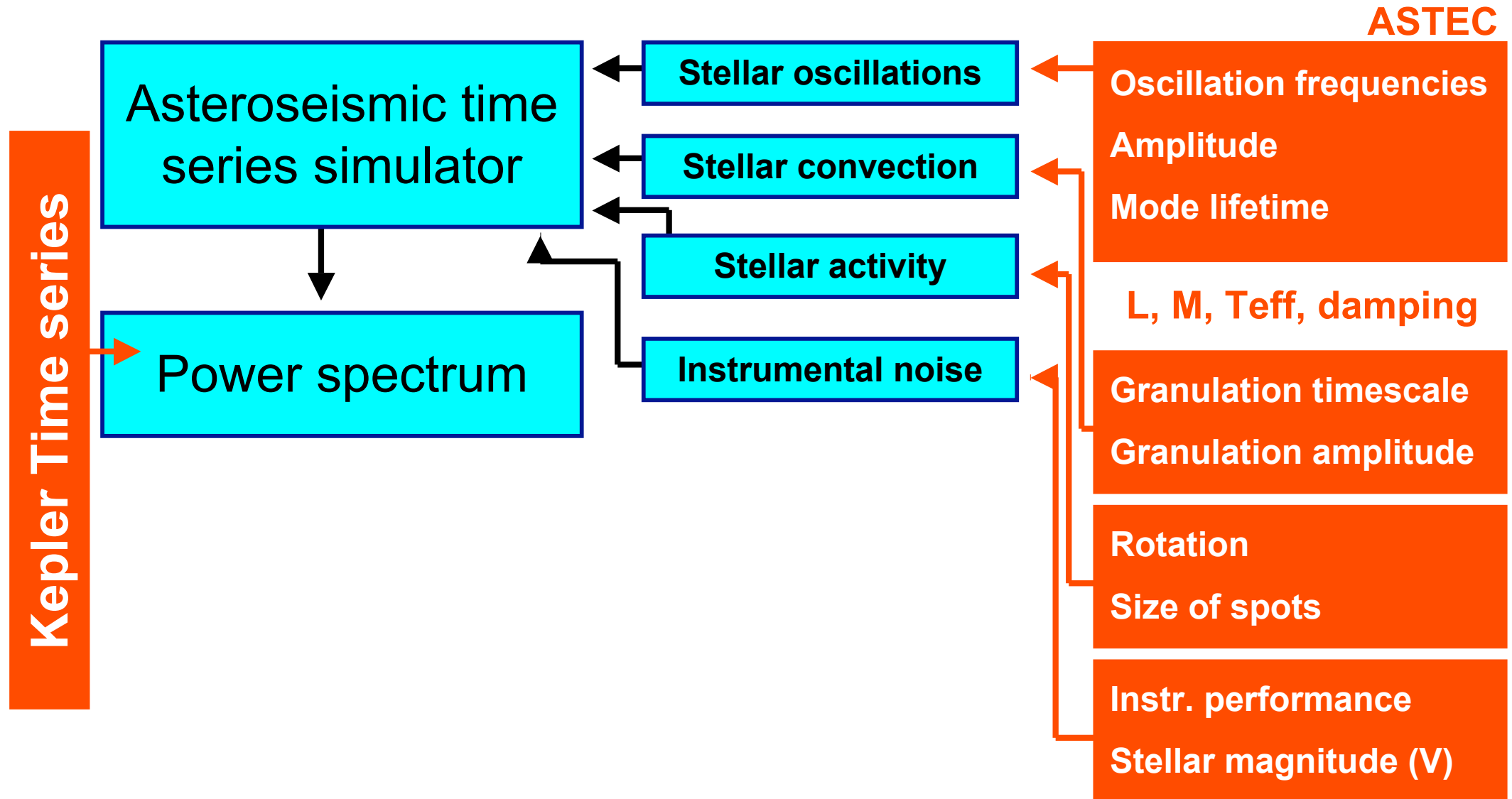
Time series simulator and pipeline SW

Constructing pipeline analysis tools for asteroseismic targets



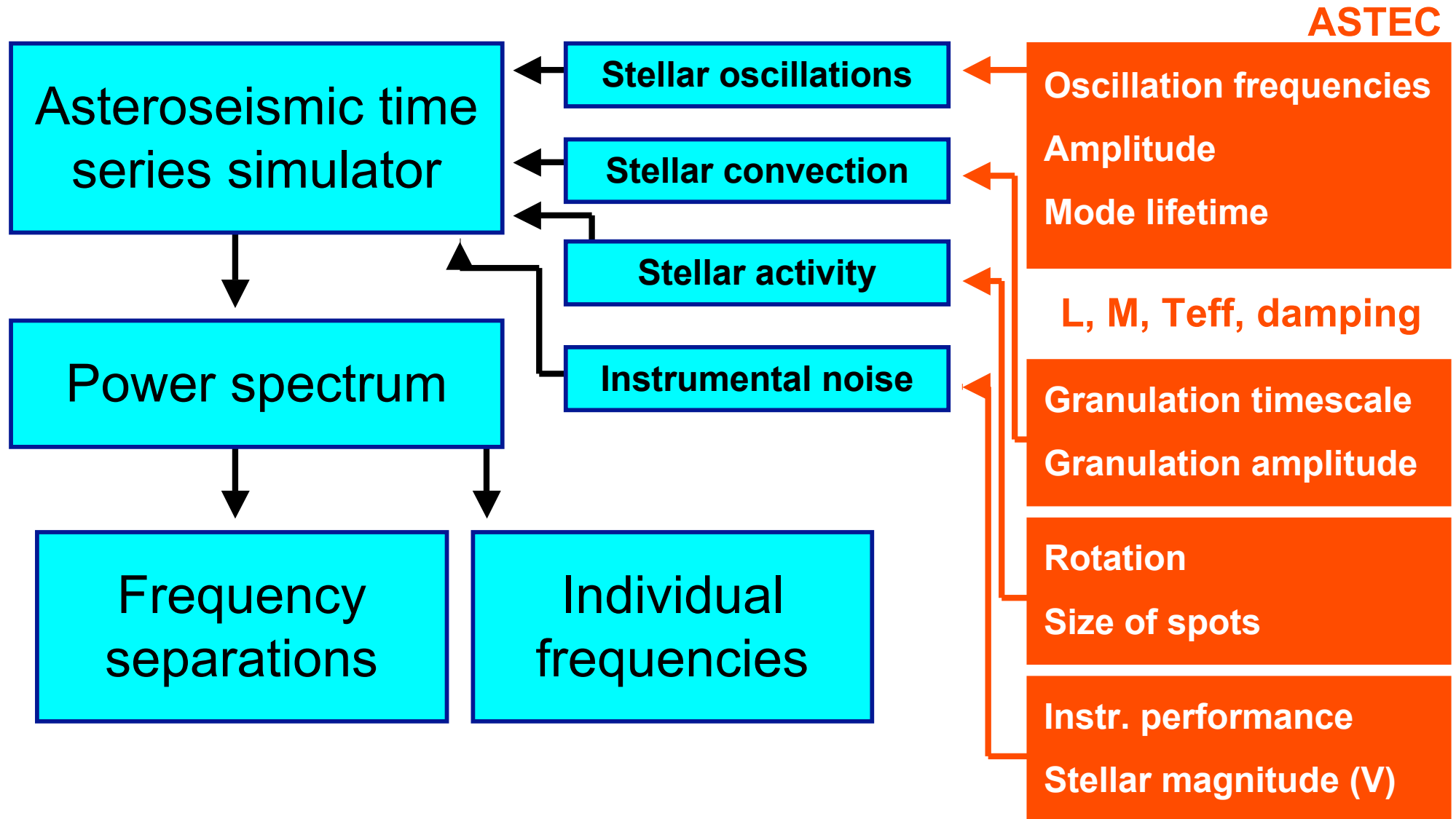
Time series simulator and pipeline SW

Constructing pipeline analysis tools for asteroseismic targets

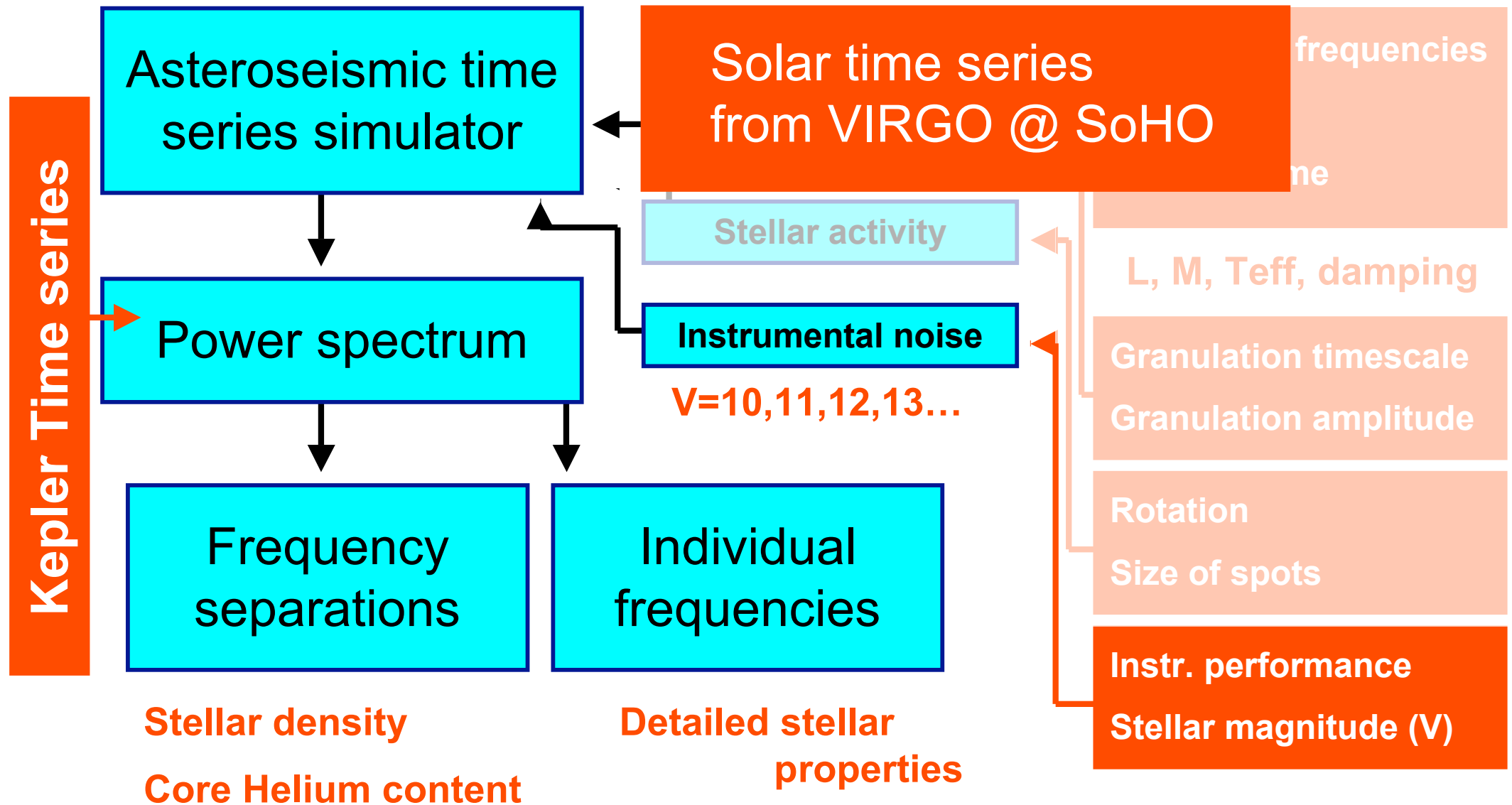


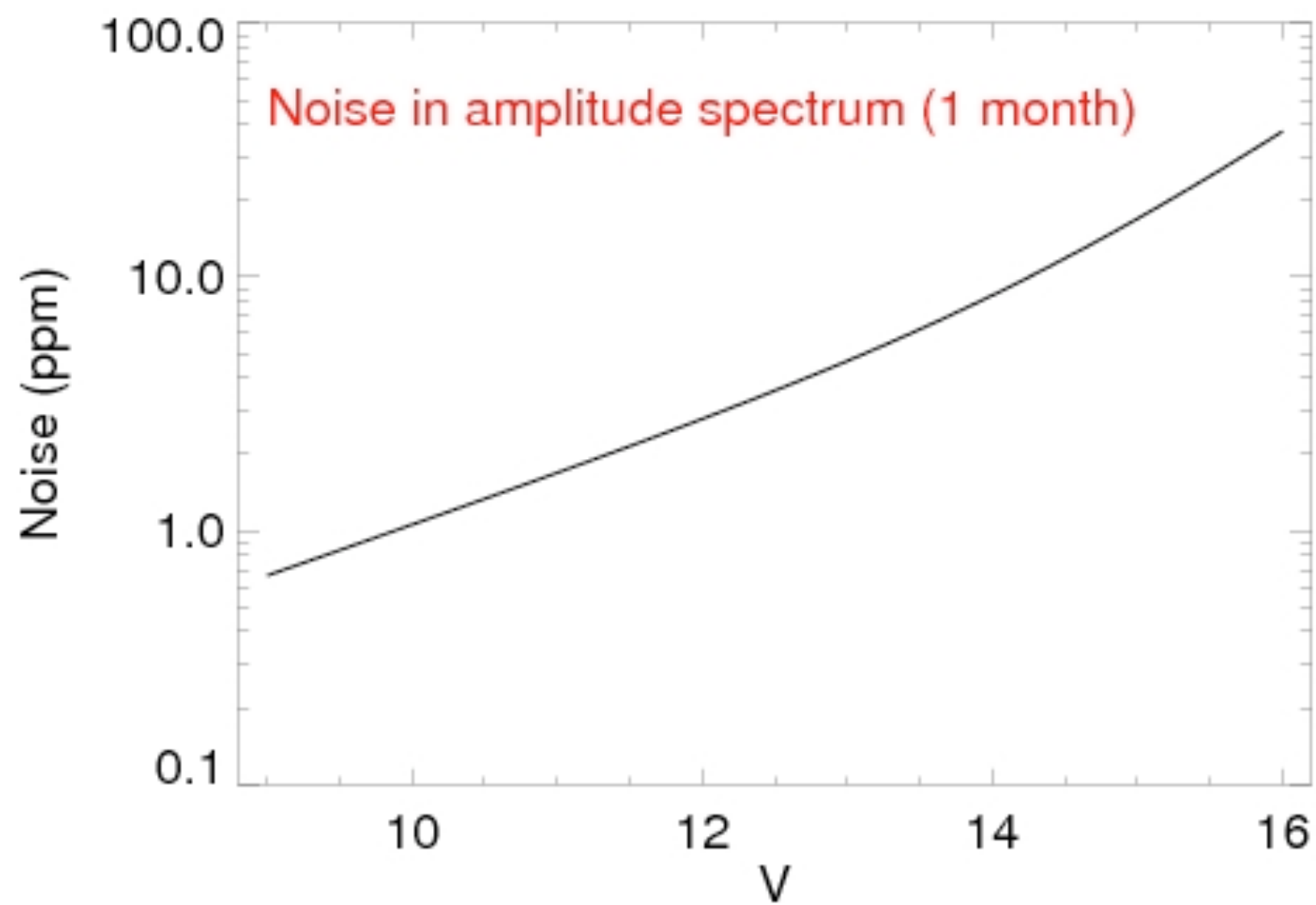
Time series simulator and pipeline SW

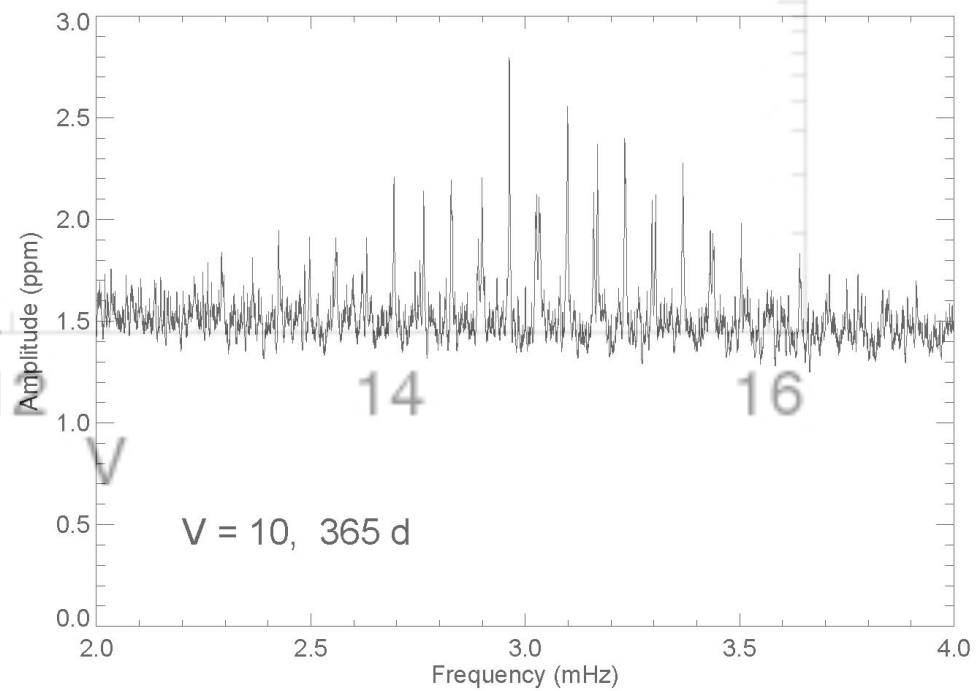
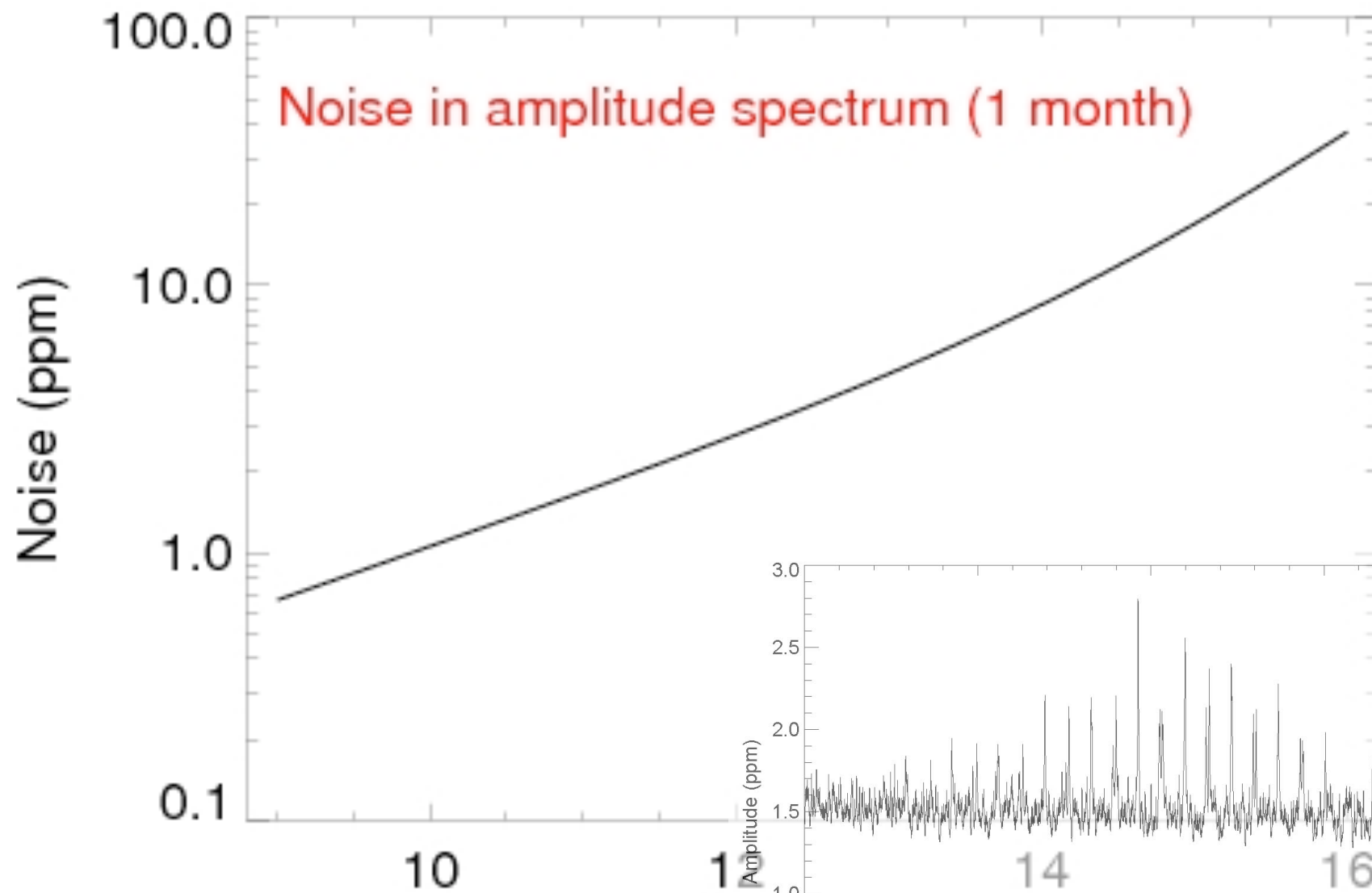
The Aarhus Simulator

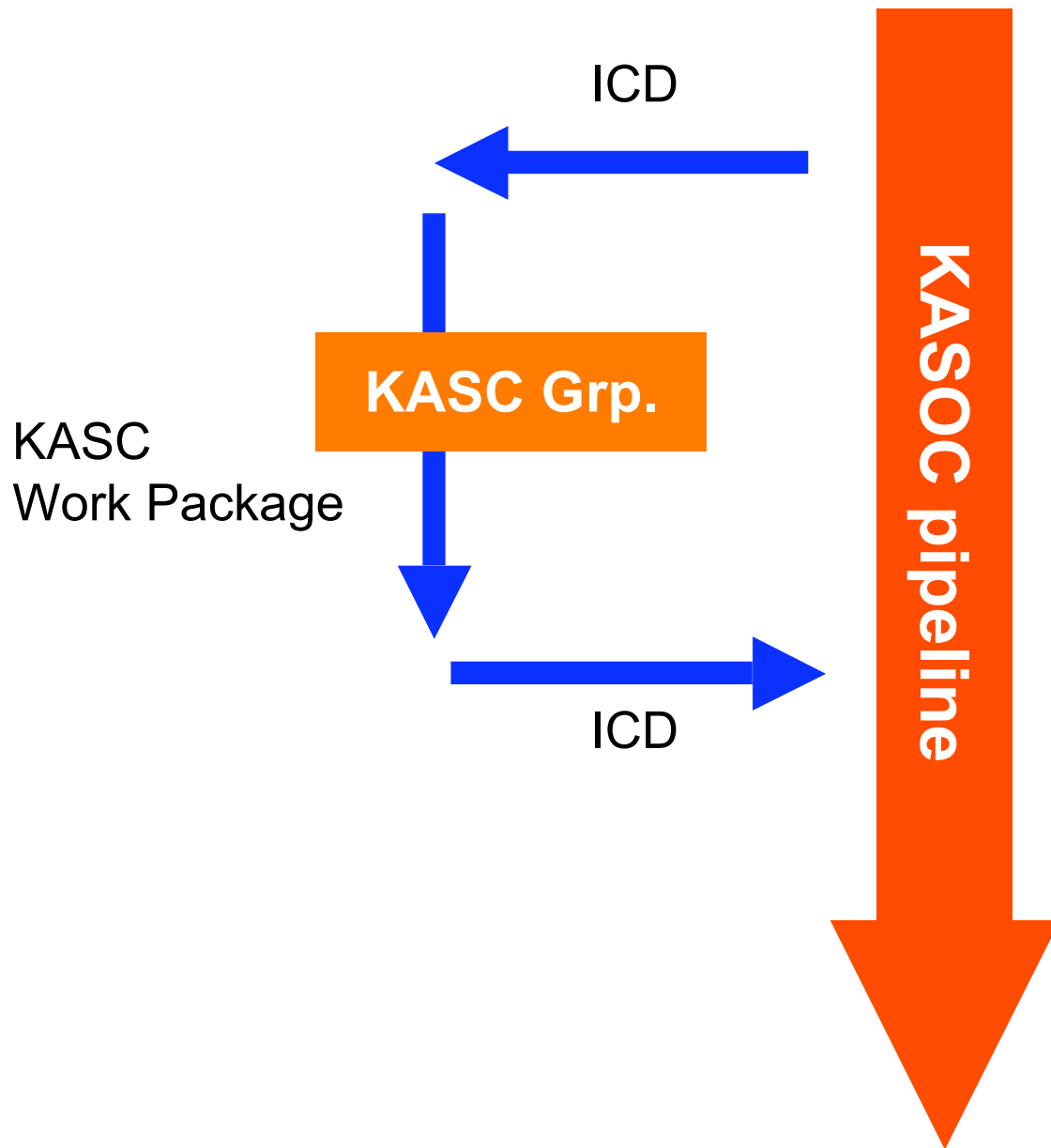


Time series simulator and pipeline SW









Data Analysis
Target Selection

Review activities

March 2008

KASOC Review #1: Data analysis review (internal)

November 2008

KASOC Review #2: Final review (internal)

March 2009

Commissioning of KASOC (Kepler in space).

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March 2008	KASOC Review #1: Data analysis review (internal)
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March 2009	Commissioning of KASOC (Kepler in space).

Hare-and-Hound exercises and relation to AsteroFLAG

Test and verification procedures KASOC test weeks

Data Analysis at KASOC

