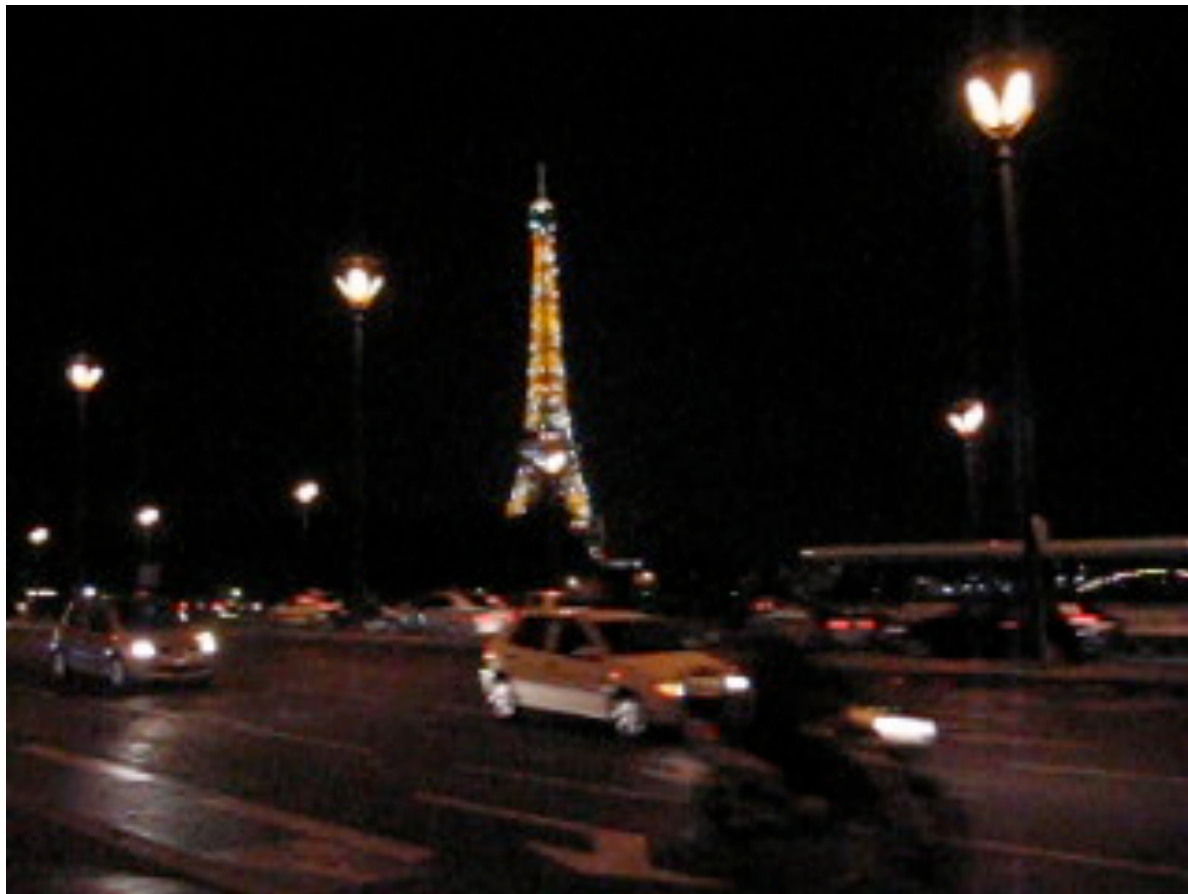


Structure, rotation and other aspects of stellar physics



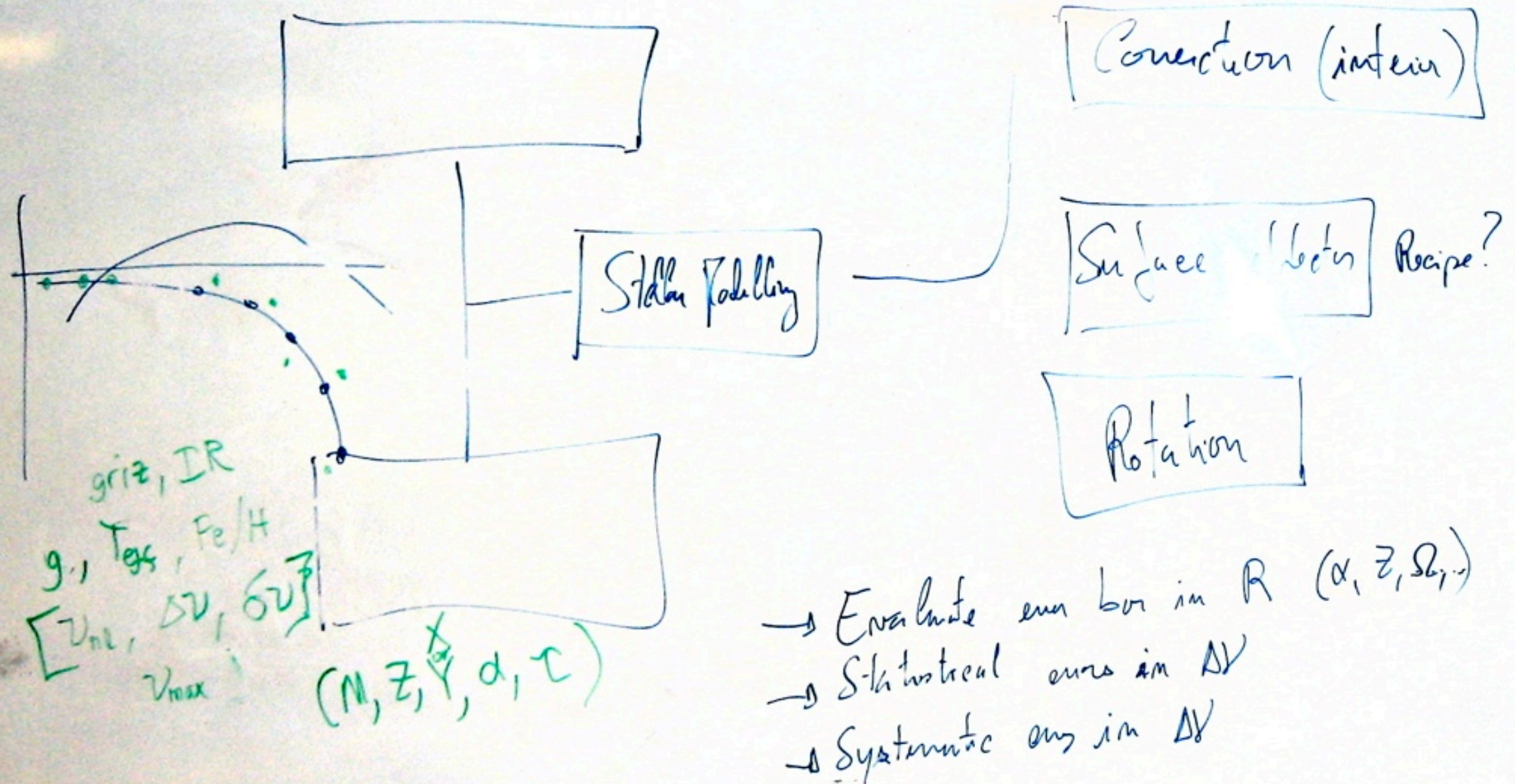
First KASC Workshop
Splinter session report
10-31-07

Items from Monday and Tuesday

Pipeline model fitting

- *Structure ‘directly’ from the temporal spectrum*
 - frequencies
 - large spacings
 - small spacings
- *Rotational splitting - uniform (& differential)*
 - contrast & compare with photometric P_{rot}
- *time variation of the temporal spectrum*
 - frequency variation across stellar magnetic cycle
 - long term phase variation not viable for solar-type
 - dP/dt for δ Scuti / roAp / γ Dor / spB : PMS? Subgiant?
 - (O-C) planet constraints for classical pulsators
- *What data products do **we** need (transit removal impact)?*
 - longer period pulsators (but non solar-type)

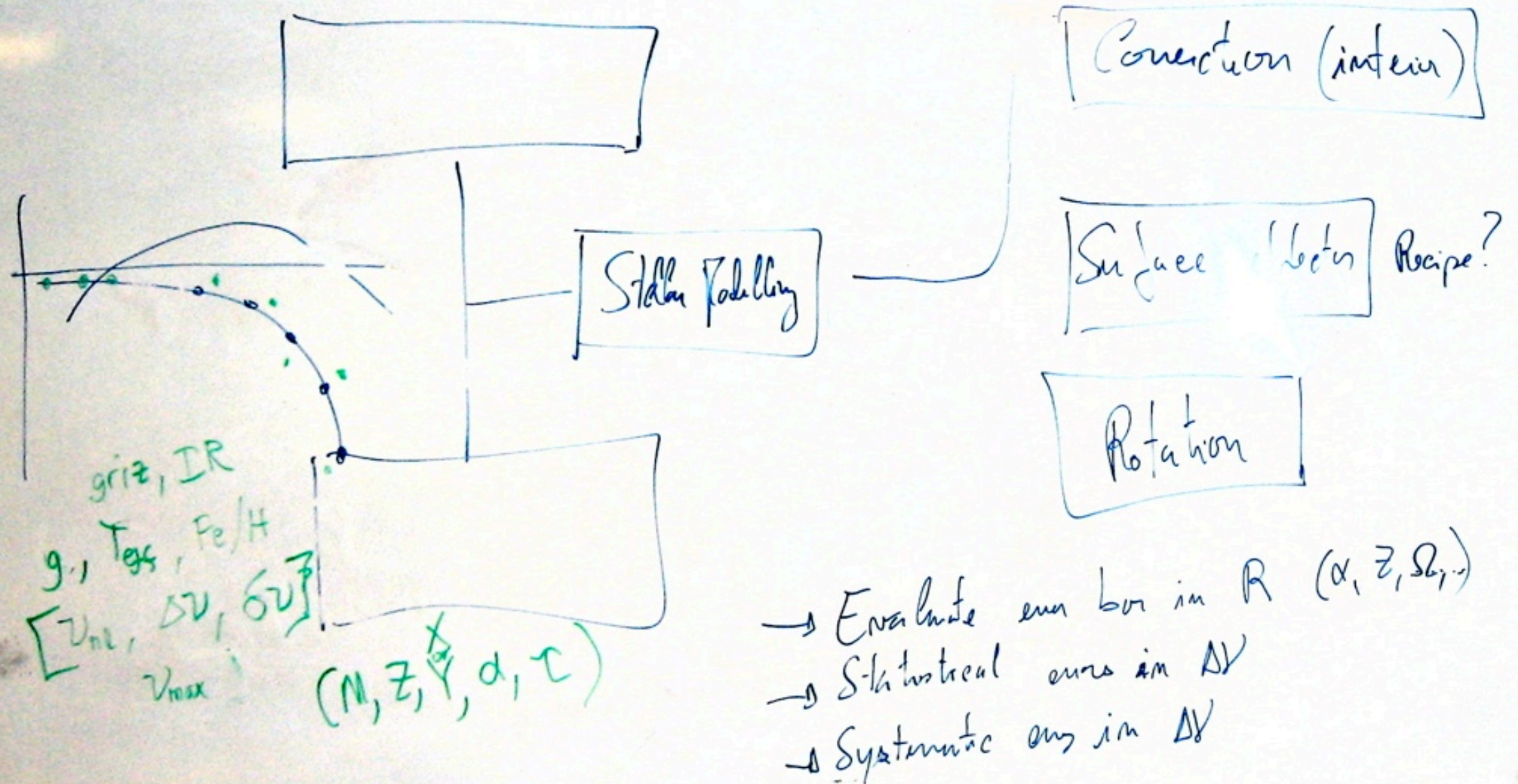
Model Fitting - Pipeline



more from Tuesday

- *physics to improve*
 - near-surface layers
 - convection (structural and dynamic)
 - damping, excitation
 - (small effects at low frequency, bigger at higher - see HK/TM)
- *sharp features in models - interior structure*
 - ionization, CZ boundary
 - second differences
 - “evolution is all about profiles...” - JCD
- *Rotation (MT’s talk)*
 - high-order splitting
 - differential rotation - **rotation periods will be known**
 - effect on stellar structure *and* frequencies
 - J transport processes and dynamics

Model Fitting - Pipeline



Stellar Physics etc.



Target selection ideas of interest for stellar physics exploration (*feedback*)

- *Solar-type pulsators*
 - crawl before you walk: solar analogs
 - vary by Fe/H, age (?), P_{rot} (to extremes?)
 - vary away from $1 M_{\odot}$ by mass
- *non-classical pulsators: a sample*
 - sdB stars (< 1 mmag, 1 min to 1 hour)
 - WR strange modes ($P \sim 10$ min, low duty cycle)
 - GW Vir, other WDs (if any)
 - your favorite class here...
- *Secular variation in classical pulsators - evolution!*