

# Stellar Collapse Source/Data Analysis Working Group

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**Data Analysis Facilitator** : Warren Anderson (UTB)

## **Other Group Members:**

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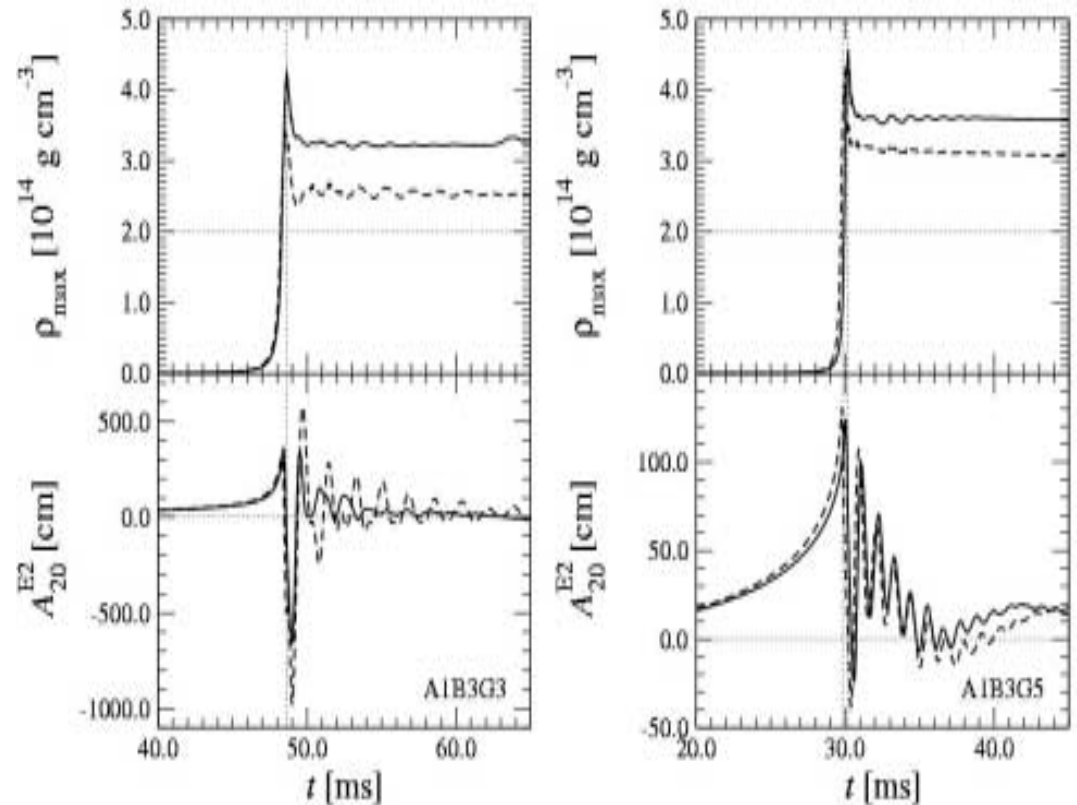
LIGO-G020393-00-Z

# Stellar Collapse Sources

- Core collapse at end of stellar evolution.
- Accretion induce collapse of white dwarves.
- Collapse of supermassive black holes (LISA).
- Neutron-star instabilities:
  - Dynamical or secular bar modes
  - CFS
  - r-modes
- Convection

# Stellar Collapse Source Analysis

- Large and active modeling communities
- Much 'messy' physics to incorporate, some poorly understood (e.g. Nuclear equation of state).
- Numerical (Newtonian and Relativistic hydrodynamics) and analytic (dynamics and stability of equilibria) modeling being used.

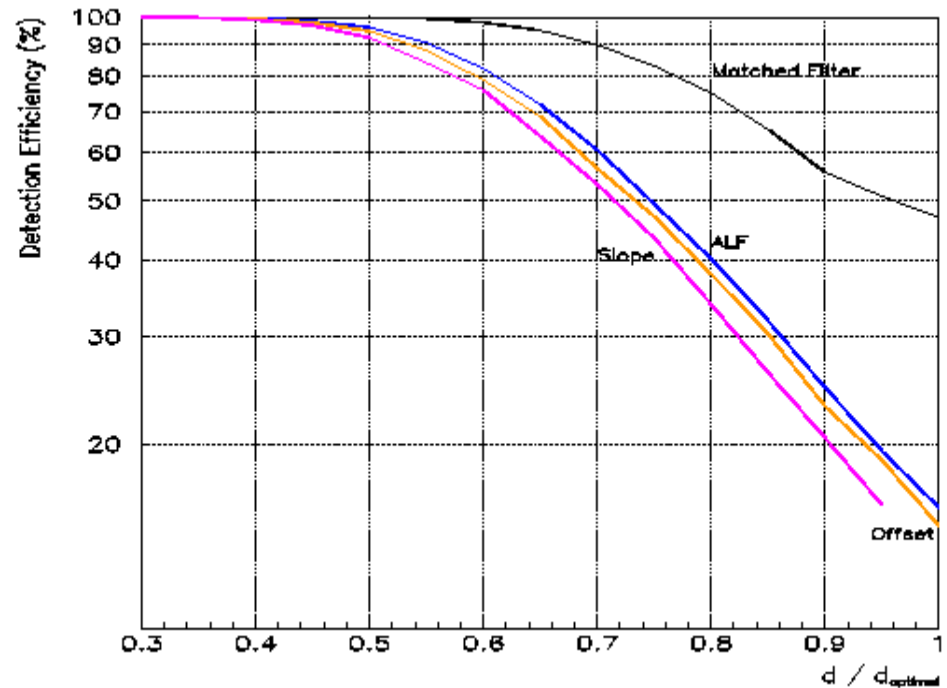


H. Dimmelmeier, J.A. Font, E. Müller,

[http://www.mpa-garching.mpg.de/Hydro/RGRAV/figures\\_jpg.html](http://www.mpa-garching.mpg.de/Hydro/RGRAV/figures_jpg.html)

# Stellar Collapse Data Analysis

- Probably the most used examples of 'unmodeled' burst sources.
- Algorithms tuned to specific sources not yet developed.
- Time-frequency (e.g. TF-clusters) and time domain (e.g. Slope detector) are currently for generic bursts currently available.



T. Pradier, N. Arnaud, M.-A. Bizouard, F. Cavalier, M. Davier and P. Hello

Phys.Rev. D65 (2002) 033010, gr-qc/0010037

# Stellar Collapse Group Info

- Group has a webpage, not yet set up at:
  - <http://www.lsc-group.phys.uwm.edu/gwawg/>
- Group has a mailing list, you can subscribe by at:
  - [stellarcollapse@gravity.phys.uwm.edu](mailto:stellarcollapse@gravity.phys.uwm.edu)
- For more info please feel free to contact me in person or via e-mail ([warren@phys.utb.edu](mailto:warren@phys.utb.edu)).