Supernova Burst Task Force

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April 9, 2015

- SNB TF
- Outline for the CD1-R
- To-do, schedule
- Agenda for collab meeting parallel session

Supernova Burst Task Force

- Conveners: KS and IG-B

- Mailing list: `dune-physics-snb@fnal.gov`
  populated from old lbne-snb list + new subscribers
  ... all welcome to help!

- Parallel session at the collaboration meeting,
  Thu April 16 13:30-15:00
  (neither Ines nor I can be there in person
  ... will attend remotely)

- Main job: CD1-R text

- Purview: SNB + other low-energy + astro ν's

From André and Mark, Mar 26:

The main goal of each the TF is to prepare the relevant section of the high-level CDR documents. The timescales for a first "rough" draft are very short…

15 April	Draft CDR to be ready for collaboration meeting (as much as we can have)
5 May	Complete draft ready for final project office reading
19 May	Complete CDR ready for Director's review posting

We will need to talk to each other + the importantly the project management team (e.g. L2 managers and project scientist). Anne and Brett will support the (latex) infrastructure for the relevant documents (Vol. 2 Physics & Vol. 4 DUNE). This is not a purely editorial process and we would also like to engage the wide collaboration in this process (even if this is only through open meetings to discuss the content). We will send around a draft outline of the CDR content tomorrow.

Not much time for much new material...
we will have to draw on existing material

LBNF CDR Volume 2 Outline – "LBNF/DUNE Physics" target 50 pages

Section	Page target	Responsible Author	Annex documents linked from this vol.
Common description-every volume	1	André/Mark	
Overview	1	André/Mark	
LBNF/DUNE Scientific Goals	3	André/Mark	
Long-baseline Neutrino Oscillation Physics	~25 total	Lisa/Thomas + Mary	LBNE Science Opp. LBNO
Context	2	Lisa/Thomas	
Mass Hierarchy	5	Lisa/Thomas + Silvia	
CPV	10	Lisa/Thomas + Silvia	
Testing the 3-flavour paradigm	3		Octant, NSI
Beam Requirements	3	Alberto/Laura	
Far Detector Requirements	2		
Beam systematic errors and near detector requirements	3	Dan/Elisabeth/Sanjib/Roberto	
Nucleon Decay and Atmospheric nus	~10 total		
Nucleon Decay	5	Jon/Josh + Takuya	
Atmospheric Neutrinos	3	Hugh/Alessandra	
Detector Requirements	2		
Supernova Neutrino Bursts and low energy neutrinos	~10 total		
Overview	1	Kate/Ines	
Neutrino Physics	3	Kate/Ines	
Astrophysics	3	Kate/Ines	
Detector Requirements	1	Kate/Ines	
Other astrophysical neutrinos	1	Kate/Ines	
Neutrino Physics at the near site	1	Sanjib, Roberto, Raj	Details under NND
Summary of Beam/Detector Requirements	3	?	

Brett Viren setting up GitHub DUNE/cdr (ready? no email yet..)

Existing material:

- LBNE SciOP document
- recent LOI
- various material from docdb on SNB requirements
- Icarus, GLACIER, ...? need any relevant info on 2-phase technology capabilities for low-energy events

More detailed outline by **Friday, April 10**
First draft by **Monday, April 13**

Another meeting next week hard... iterate by email

Parallel session at collaboration meeting:
will summarize status of the CD1-R text;
other suggestions?

Long to-do list for improving understanding of requirements,
and many possible topics for future work:
(different TPC technologies & photon sensing)
- energy, angular, position, time resolution
- deexcitation gammas, tagging, particle ID
- DAQ/triggering
- physics/astrophysics sensitivity

...