



TDR and planning session

TDRs

- As discussed in London, the aim is to prepare a section of the detector TDR in such a way that this is also useful for the accelerator TDR
 - emphasise the various parts of the physics programme, and their relative importance.
 - Expect that these will be used to support choices made about the facility.
 - Requirements from Detector TDR
 - "straight forward" in that we need to discuss the physics in context.
 - Requirements from Accelerator TDR
 - will benefit by summary of the physics programme in terms of the accelerator feature(s) required to achieve certain goals:
 - e.g. (i) the 4S machine, (ii) the charm threshold machine and (iii) polarised electron beam.



TDR: Detector

- Emphasis on the detector TDR is best motivated in terms of topic. Suggestion is:

- ~5 p. ■ Rare decay searches for NP Walsh
- ~5 p. ■ CPV and mixing studies Bevan
- ~4 p. ■ Forbidden decays: e.g. τ LFV Lusiani
- Other physics e.g. A. N. Other
 - ~1 p. ■ τ EDM
 - ~1 p. ■ g-2 related measurements
 - ~1 p. ■ $\sin^2\theta_W$
 - ~4 p. ■ Spectroscopy
- ~5 p. ■ Interplay discussion – brief review of this. Marco (tbc)
 - We have the white paper and impact document to refer to.
- ~1-2 p. ■ Review in context of accelerator.

Aim for 20-30 pages



TDR: Detector

- Emphasise a thematic approach to help illustrate the different aspects of the programme by run type:

- 4S running: 75ab^{-1}
- 5S running: 1ab^{-1}
- High energy scan: ~ 1 week
 - precision m_b as input to GUTs
- Lower Y resonance running.

- $\psi(3770)$ running

- Polarisation

- Need to understand a reasonable upper limit on the beam energy.
- For now assuming that 11.2 GeV is the target that will be able to give us a high energy scan early in the programme.



Planning

- Aim to continue having physics workshops running in parallel or as 2 day satellites to the collaboration meetings for at least the next 12 months.
- This year we have had 2 physics meetings: Elba and the December LNF meeting.
- Same model for next year.
 - Physics meeting at Elba 2012: Dates and exact format tbc.
 - Propose 1 day of plenary sessions before CM (limited attendance ~30 people), and continue with parallel sessions during meeting (no restrictions).
 - Physics meeting at Frascati in December 2012 in satellite to CM.

- Polarisation issues:
 - $\sin^2\theta_W$
 - τ LFV
 - τ EDM
 - τ $g-2$
- Threshold running
 - TDCPV Studies from Neri et al. should be compared with Inguglia et al.
 - + any other relevant studies (rare decays?)
- + B physics topic (V_{ub} ? tbd)

- Update with estimates respect to state of the art and think about:
 - Global context.
 - Polarisation requirements, how sensitivity changes with polarisation.
 - Precision requirement on polarisation (See Mike's talk in London).

- TDCPV
 - Finalise penguin pollution study (AB/BM).
 - Estimate 'tag-side interference' systematic uncertainty (AB/BM/GI).
 - Develop DTaggingTools and investigate resolution function as a function of boost (GI).
 - Update sensitivities with respect to $|\lambda|$ and $\arg(\lambda)$.
- Quantum Correlation Studies (double tag)
 - Continue to study final states (what about 3/4 body)?
- Compare precision on x/y from different approaches.

- Rare Decays?
- f_D ?
- Dalitz analysis of strong phase maps in $K_S hh$?
 - Would be good to make some progress on these areas.
 - Have a lot to learn from BES III.

- Finally there will of course be progress reports on the rest of the programme.
- Note that there will be constraints on the space available (based on last year's experience), i.e. physics in parallel with detector and accelerator.
- But this was a very useful meeting last time and we made a lot of progress toward the white paper.
- We assume that the meeting layout will be similar at Elba this year.