



Progress and Plans of the Beam Delivery Systems and Machine Detector Interface WG

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CLIC-ILC Collaboration - #3
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Global Design Effort



Plan of the talk

- CLIC-ILC developments so far
- BDS design mtg within ATF2 project meetings
- SC FD, nm stability, at ATF2 & CLIC
- CLIC FF, collimation, IR, L^* , etc
- Detectors and MDI
- Ideas for CLIC08 MDI WG agenda
- LCWS08



CLIC-ILC developments so far

- Suggestion by CLIC colleagues to study low β^* at ATF2
 - **Higher chromaticity, more CLIC-like**
 - **Will be done at ATF2**
- Contribution of CLIC colleagues in development of tuning algorithms for ATF2 is essential
- Regular participation of ILC colleagues in CLIC stabilization meetings, in particular related to IR configuration
- Started design discussion on polarization measurements in CLIC
 - **had first Webex mtg with SLAC and DESY polarimetry colleagues and CLIC colleagues**
- Discussing SC FD prototype to be build for ATF2 to study ~nm-100nm stability range



BDS design mtg within ATF2 project meetings

- Plan to have
 - **BDS design session within ATF2 Special project meeting on Oct 1**
 - (The Oct 1 ATF2 mtg devoted to ATF2 commissioning, that will start on November 1)
 - **½-1 day BDS design session within ATF2 project meeting on December 15-18**
- Goals of BDS mtg within ATF2 meetings:
 - **a) enhance connection for ILC BDS design & ATF2 work for their mutual benefits;**
 - **b) analyze ATF2 outcomes for possible improvement of ILC BDS design;**
 - **c) help revitalizing the BDS design efforts which are hopefully recovering from the 2007-08 budget hits**
- Expect and encourage CLIC colleagues to participate actively in these events



SC FD, nm stability, at ATF2 & CLIC

- Redefining the plans for SC Final Doublet prototype in realities of longer ILC schedule
 - **Suggest and plan to redefine work on ILC SC FD prototype, limiting the long SC coil testing**
 - **and enhancing work for full scale SC FD for ATF2, where stability with beam could be studied on ~100nm (ILC spec) and ~nm (CLIC spec) level**
 - Design of SC FD for ATF2 still to be defined: whether to make full FD or only QD0-SD0 part as SC, whether to make design 2K compatible but use 4K at KEK and 2K in BNL tests, etc...
 - Real design work could start only after October...



CLIC FF, collimation, IR, L^* , etc

- Work started to evaluate ILC BDS (only scale bends and replace FD) for CLIC 3TeV CM
- Re-evaluate collimation design
 - **Compelling experimental evidence obtained in SLAC studies that beam damage from CLIC-short bunches is dramatically reduced**
- In one of the logical chains it is argued that CLIC IR stability could only be obtained if L^* increased to allow locating FDs outside of detector
 - **FF with doubled L^* started to be evaluated**
- More details on all these points at CLIC08



Detectors and MDI

- Prepared and published (EPAC08) the draft of the “IR Interface Document”
 - **a Machine-Detector “Wedding Contract”**
 - **key participation of CERN colleagues in preparation of the document**
 - **further optimization of Interface Document required before ILC LOI submission**
- September 08: collaboration meetings of ILD and SiD detector concepts
 - **CERN colleagues participated**
 - **Results in large applicable to CLIC**
 - **Experience and achievements from CMS, in particular, affected optimization of ILC detector concepts**



Ideas for CLIC08 MDI WG agenda

- There will be joint MDI-Detector session
- Will discuss
 - **ILC BDS for 3TeV**
 - **Super-short collimation**
 - **Polarization measurement at CLIC (Webex to SLAC, DESY, etc)**
 - **IR, L* and stability**
 - **ATF2 low beta**
 - **ILC FD SC and ATF2 SC FD and CLIC requirements**
- Detailed agenda and list of talks will be defined in ~a week
- LCWS08 and ATF2 Project mtg in December
 - **Follow up on planned work as outlined above**
 - **Expect active participation of CLIC colleagues in these mtgs**