

Sources Subgroup Summary, Dec.21 & 23. 2020

K. Yokoya, for IDT-WG2 Jan.05

- There have been 2 meetings since the last WG2
- Dec.21 7th Regular meeting
 - ✓ Masao Kuriki, Hitoshi Hayano, Gudi Moortgat-Pick, Joe Grames, Kaoru Yokoya, Steffen Doebert, Shin Michizono, Jenny List, Andy Lankford, Sabine Riemann, Peter Sievers, Benno List (Some are missing, perhaps)
 - ✓ Indico <https://agenda.linearcollider.org/event/9037/>
 - ✓ Final discussion on the electron source
 - Presentation by Joe (uploaded to indico: TechnicalPreparation_PES_v5.docx)
 - Drive laser: big progress since TDR. Build a prototype
 - High voltage gun: evaluate if higher voltage needed
 - Cathode: work with vendors to commercialize
 - Discussion
 - Priority to cathode, work with vendors would take time
 - Timeline: 2-4 years, EIC perhaps earlier
 - Nagoya group: The group broke up but some researchers are still working in other places
 - Joe's draft almost done. Some format changes only.
 - ✓ Final Version of the document
 - Document status (Kaoru)
 - Structure of the document
 - The latest versions
 - TechnicalPreparation_PES_v5.docx
 - Techn-Prep-Undulator-fin-rev.docx
 - Technical Preparation_EDriven_draft-V0.8.docx

- Dec.23 Special meeting on possible US participation for undulator source
- Participants: Pushpalatha Bhat (FNAL), Pushpalatha Boffo, Cristian Boffo (FNAL), Phil Burrows, John Byrd (ANL), Dmitri Denisov (BNL), Wilfram Fischer (BNL), Joe Grames (JLAB), Don Hartill (Cornell), Hitoshi Hayano, Masao Kuriki, Andy Lankford, Wanming Liu (ANL), Gudi Moortgat-pick, Sergei Nagaitsev (FNAL), Dinh Nguyen (SLAC), John Power (ANL), Soren Prostemon (LBNL), Sabine Riemann, Thomas Schenkel (LBNL), Peter Sievers, Kaoru Yokoya (Some are missing, perhaps)
- indico: <https://agenda.linearcollider.org/event/9038/>
- Status of the document (Kaoru)
 - ✓ Lab name policy
 - ✓ Eliminate company names, all UK labs to just UK, etc
- Possible US participation to the undulator scheme
 - ✓ Introduction: presented by Gudi (AWLC2020-Acc-Plenary-Civil.pdf)
- Discussion
 - ✓ “Selection” at the end of first year of Pre-lab. (2+ year from now)
 - Criterion of the “selection”?
 - ✓ Solenoid
 - Why is the solenoid pulsed? Answer: power. Comment: Then, what about superconducting? Answer: radiation environment. Etc. etc.
 - Problem of DC solenoid: heating limit by eddy current would be very low.
 - What about a big solenoid to cover the entire target? Then, no eddy current.
 - ✓ Plasma lens
 - Univ. Hamburg
 - Status (simulation): factor 2 better yield than QWT
 - ✓ Lithium lens used for proton. Problem of the window.
 - ✓ Undulator
 - ✓ Accuracy not demanding compared with XFEL
 - Undulator cost high? Answer: No, already included in TDR. Not a big fraction.
 - Photon divergence angle from undulator can be too small?
 - Answer: not so small. Photon is incoherent.
 - ✓ Target replacement
 - Common to undulator and e-driven schemes
 - More power on target for e-driven (20 kW vs. 2 kW)
 - ✓ List of possible US participation
 - Andy will create the list later