ILC Technology Network information meeting

Jenny List
23rd Future Colliders @ DESY meeting
20 October 2023

HELMHOLTZ RESEARCH FOR GRAND CHALLENGES

DESY.

CLUSTER OF EXCELLENCE
QUANTUM UNIVERSE

ILC Technology Network

Overview

- new collaboration addressing the most time-critical work-packages of the original pre-lab program
- based on institutes of IDT WG2 members, plus some new (eg Korea U)

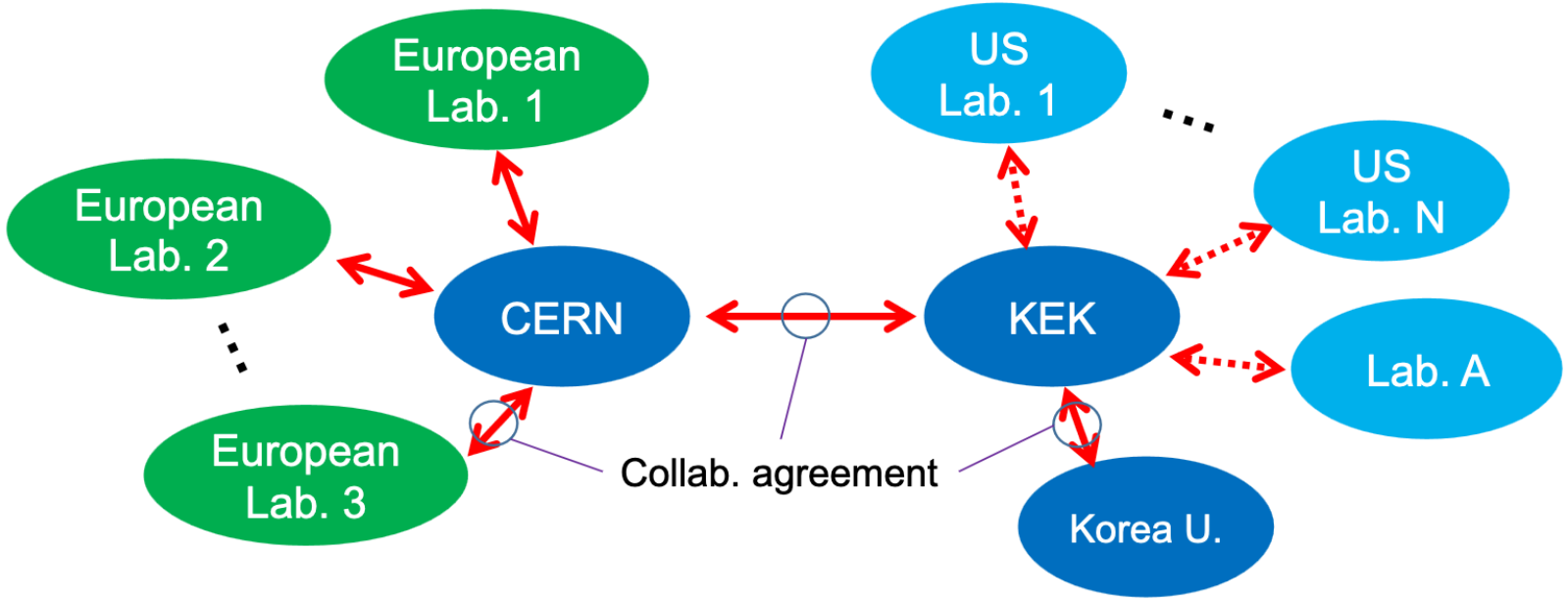
ILC Technology Network

Overview

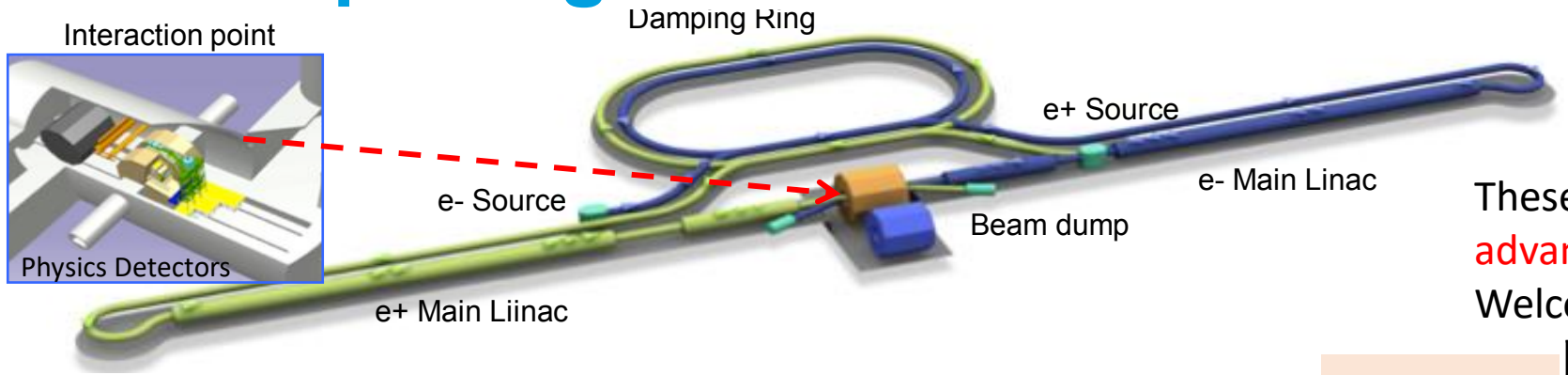
- The ITN is jointly initiated by KEK and IDT to execute high priority work packages identified by the IDT-WG2 from the ILC Pre-lab Proposal.

- ITN is an independent organization based on Arrangements between KEK and participating laboratories, and it takes full responsibility for the execution of those work packages.

- In Europe, CERN agreed to serve as an European hub of the ITN, and an agreement was signed by KEK and CERN.



ITN Workpackage Overview



international development team

These WPs can be applied to various advanced accelerators.
Welcome to join!

- Creating particles — ***Sources***
  - polarized elections / positrons
- High quality beams — ***Damping ring***
  - Low emittance beams
    - Small beam size (small beam spread)
    - Parallel beam (small momentum spread)
- Acceleration — ***Main linac***
  - superconducting radio frequency (SRF)
- Getting them collided — ***Final focus***
  - nano-meter beams
- Go to ***Beam dumps***

SRF
for energy-reach

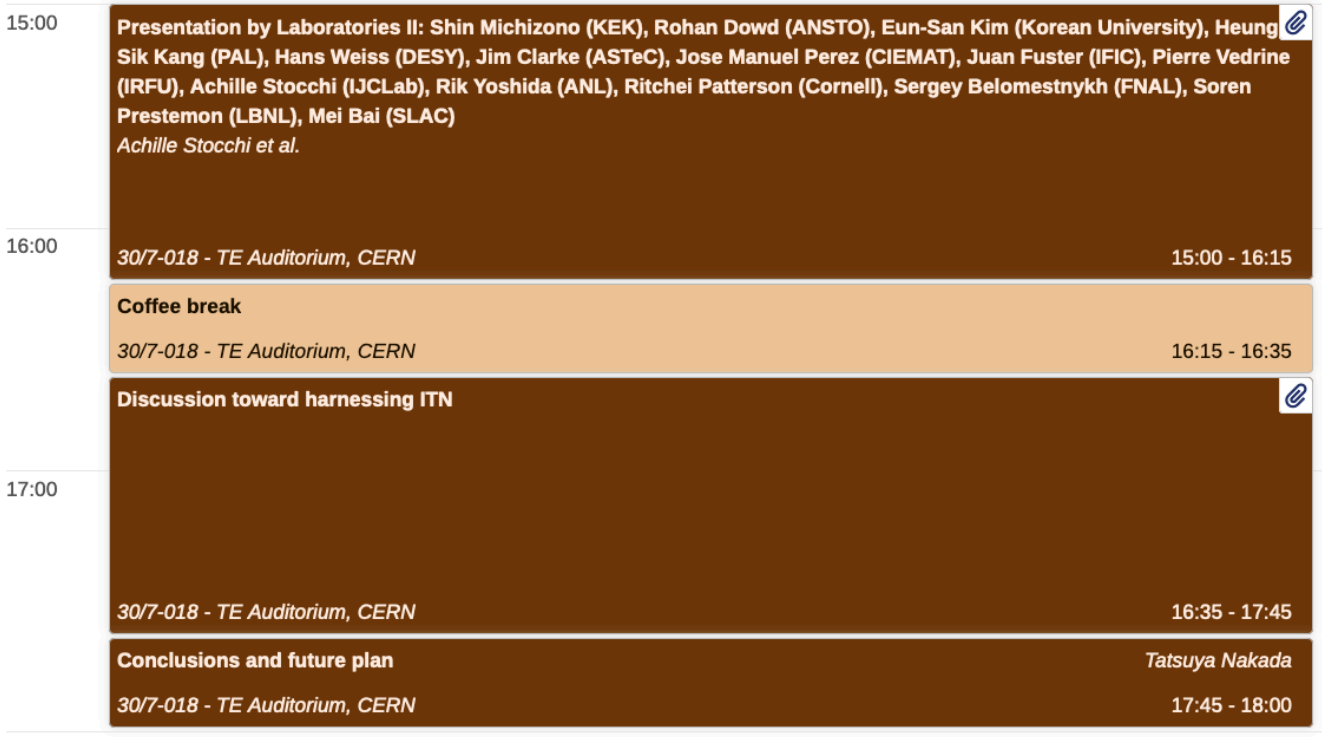
e-, e+ Sources
for ensuring e-/e+ collision

Nanobeam
for high luminosity

WPP	1	Cavity production
WPP	2	CM design
WPP	3	Crab cavity
WPP	4	E- source
WPP	6	Undulator target
WPP	7	Undulator focusing
WPP	8	E-driven target
WPP	9	E-driven focusing
WPP	10	E-driven capture
WPP	11	Target replacement
WPP	12	DR System design
WPP	14	DR Injection/extraction
WPP	15	Final focus
WPP	16	Final doublet
WPP	17	Main dump

ITN Information Meeting

Oct 16/17 at CERN



- introductory talks on ITN and work areas
- presentations by > 20 labs / universities from Europe, Japan, Korea, US, Canada
- DESY represented by Hans Weise
- joint discussion

ITN Information Meeting

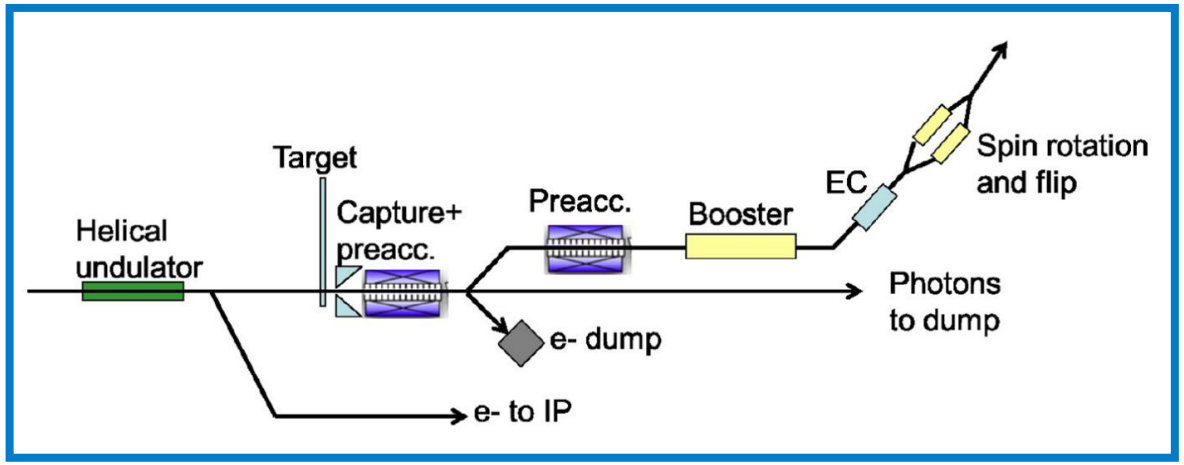
Oct 16/17 at CERN

- ~25 people in-person
- incl sizable delegation from Japan
- >40 on zoom
- for those who still know her from ILD: Yumi Aioki now works for KEK PR, was there with Rika

Next Steps

boot strapping the ITN

- collected a matrix of who's interested to contribute to which work package
- will be iterated with lab representatives, who'll name contacts for each WP
- guided by IDT WG2, each WP will discuss distribution of deliverables etc
- each institute committing to deliverables will be member of the ITN, regardless if direct agreement with KEK or via a regional hub lab
- one of the first activities in place: design and prototype construction of pulsed solenoid as capture device for the positron source (Gudi, UHH/DESY)



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