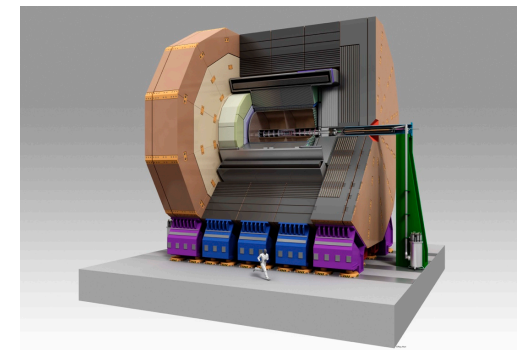
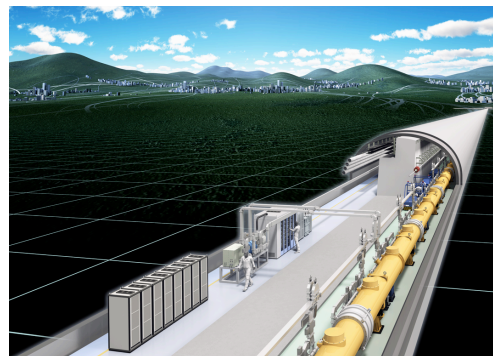


International Linear Collider

Eckhard Elsen



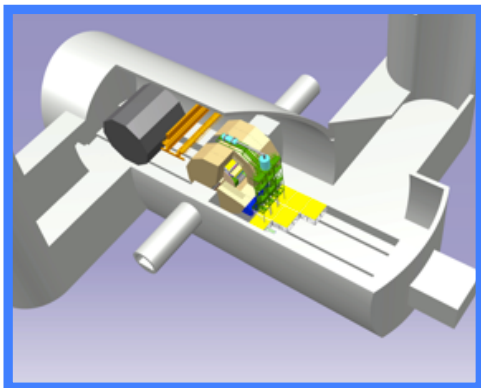
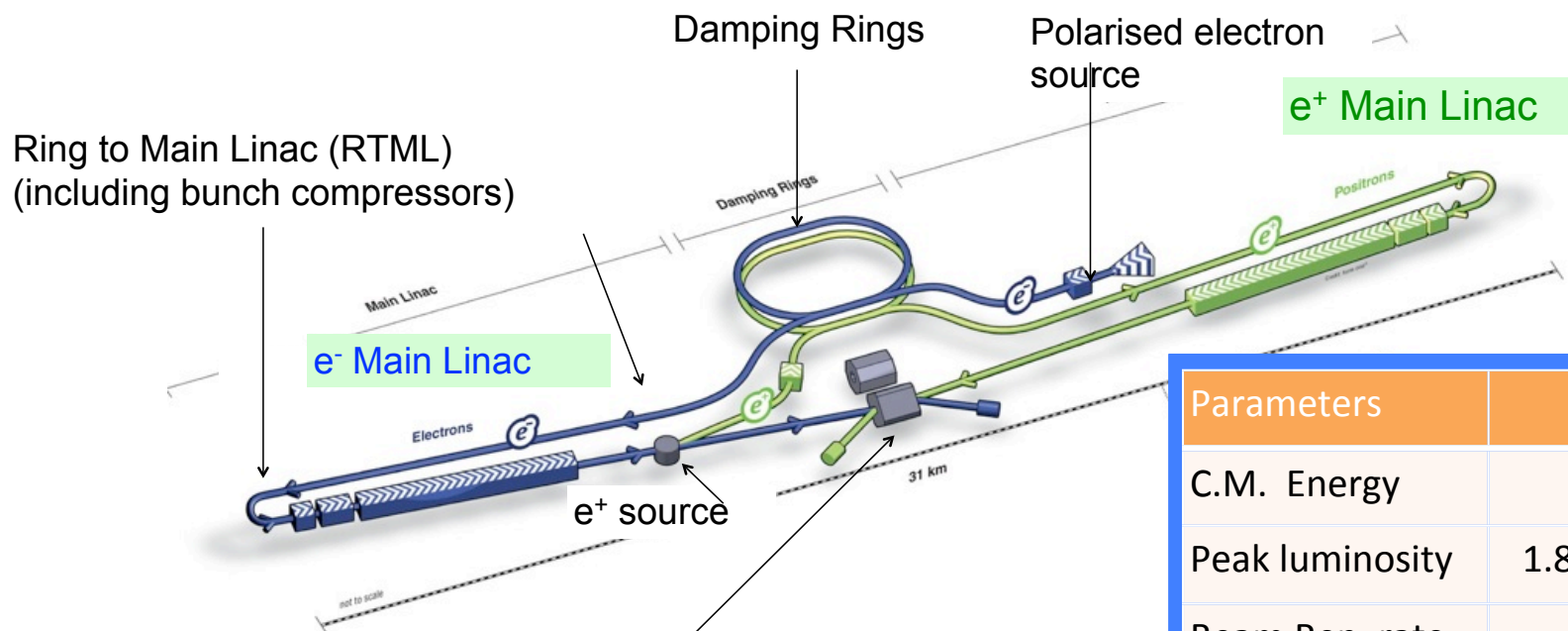


Global Strategy for an e^+e^- linear collider

- Coherent statements from all three regions
 - Japan
 - European strategy
 - US Snowmass process



ILC Layout



Parameters	Value
C.M. Energy	500 GeV
Peak luminosity	$1.8 \times 10^{34} \text{ cm}^{-2}\text{s}^{-1}$
Beam Rep. rate	5 Hz
Pulse duration	0.73 ms
Average current	5.8 mA (in pulse)
Field in SCRF acc. cavity	$31.5 \text{ MV/m} \pm 20\%$ $Q_0 = 10^{10}$



Technical Design Report completed

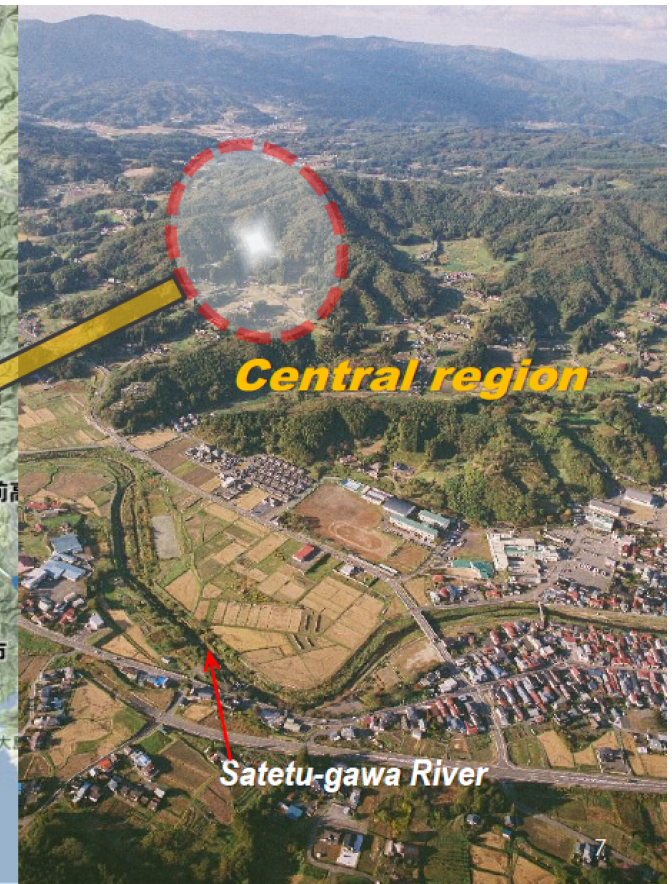




ILC Site in Japan



Northern Site
Iwate Prefecture





DESY contributions to ILC in a nutshell

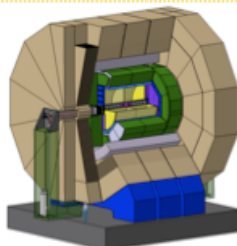
- TESLA activities date back to the early 1990s
 - Accelerator
 - DESY is home to 1.3 GHz SRF cavity development
 - European XFEL is world-unique opportunity to explore performance of mass-produced cavities; there is a special high-gradient activity with 24 cavities
 - Detector
 - Significant contributions for the detector, originally GLD now merged with Japanese initiative in ILD
 - High-resolution readout for TPC
 - Particle flow for high-resolution calorimeters
 - Test beam and infrastructure widely used for verification of new concepts



Detectors for a LC

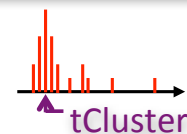
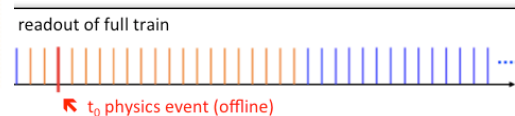
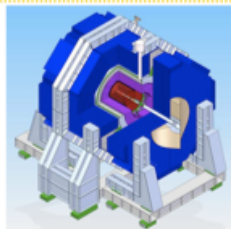
ILD: International Large Detector

“Large” : tracker radius 1.8m
B-field : 3.5 T
Tracker : TPC + Silicon
Calorimetry : high granularity particle flow
ECAL + HCAL inside large solenoid

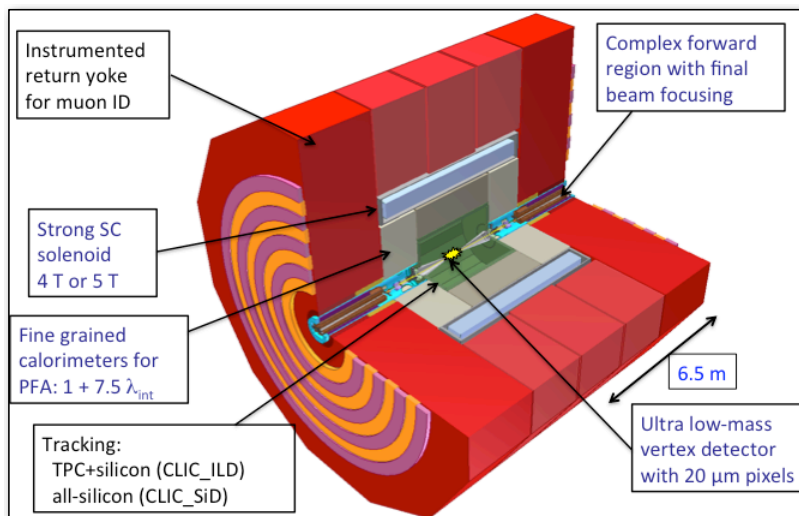


SiD: Silicon Detector

“Small” : tracker radius 1.2m
B-field : 5 T
Tracker : Silicon
Calorimetry : high granularity particle flow
ECAL + HCAL inside large solenoid



CLIC detectors based on ILC concepts:



- CLIC timing structure demanding:
- Detailed GEANT 4 simulation
 - Consider in particular pair background and $\gamma\gamma$ -processes
- Studied using full reconstruction with background
 - Make full use of timing and fine granularity to reconstruct the physics objects with very high precision
- Shown to be fully compatible with high precision e+e- physics