

E-JADE is a Marie Skłodowska-Curie Research  
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**E-JADE Mid-Term Review**

# **E-JADE and ILC Machine-Detector Integration – a Personal View**

**Karsten Buesser / WP3**



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# Who am I?

- Karsten Buesser, elementary particle physicist
- Since 16 years working on Linear Collider Machine–Detector Interface Problems
- Working group leader of the ILC MDI WG (machine and detector organisation)
- Deputy technical coordinator of ILD
- In E–JADE working in WP3, Task 3.2 (Machine–Detector Integration)
- E–JADE secondments to Japan (KEK/Tokyo): so far 23 days (three travels)
- Total travels to japan: 12 (86 days)



# ILC Kitakami Site

- Proposed by Japanese HEP community
- Geological reasons
- >50km granite rock
- „green-field site“ – no major lab infrastructure close by
- Chance and challenge to design coherent international facility for technology and science



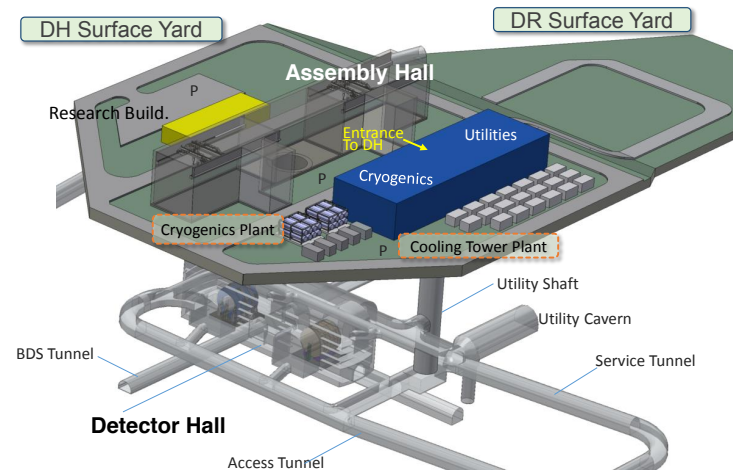
# ILC Interaction Region Planning

- Japanese scientist have proposed site in northern Japan for the ILC
  - Kitakami mountain range
  - Everywhere in Japan: limited road transport capacities
- ILC design in TDR was generic, now have to adopt site-specific design – biggest problem: Interaction Region – where everything comes together: machine, detectors, central lab campus

ILC Central Lab Campus (M. Miyahara)

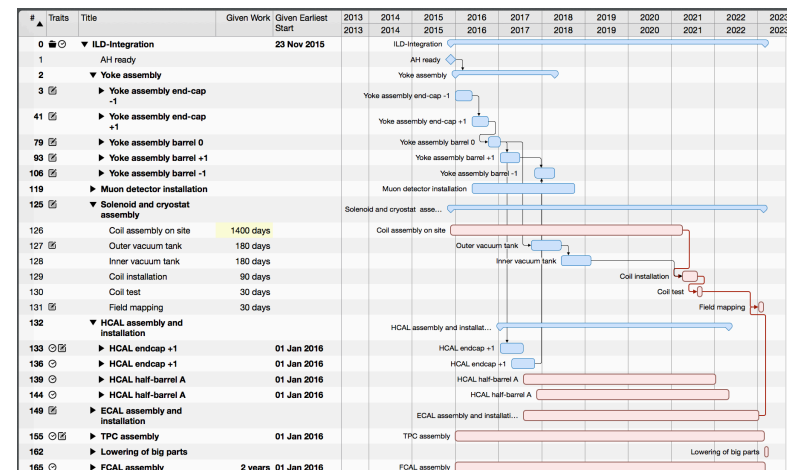
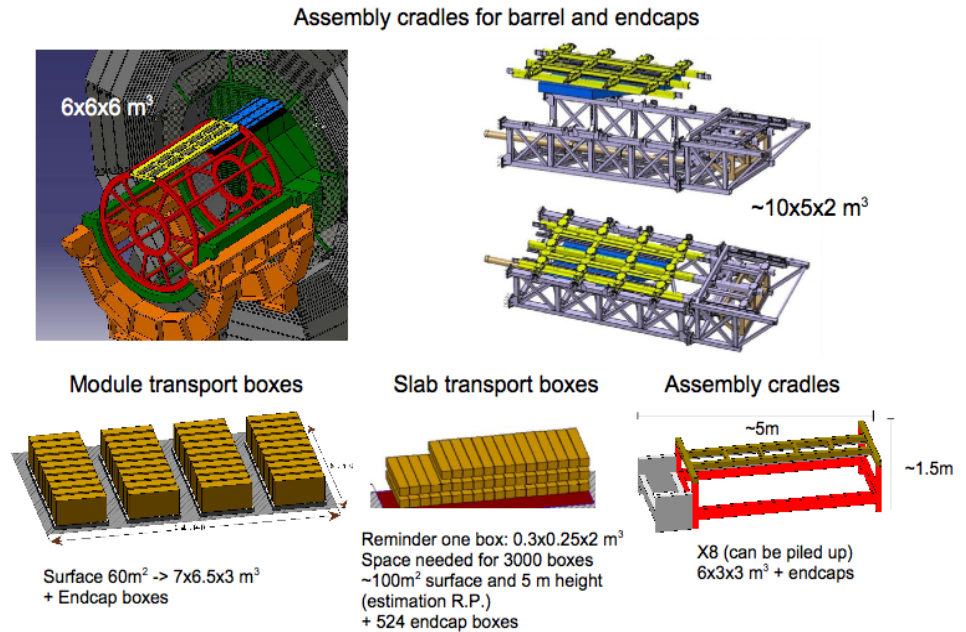


ILC Interaction Region (M. Miyahara)



# Detector Assembly in Kitakami

- Assembly of ~15kt detectors requires careful planning
- Boundary conditions from subdetector technologies, engineering and local conditions (roads, etc.) are complicated
- Engineering model has impact on physics studies
  - Dead material, segmentations, etc.
- Need to be prepared for a possible go-ahead within a few years
- E-JADE deliverable: detector assembly plan for Kitakami



# E-JADE Outcomes

- Organisation of three MDI related meetings in Japan:
  - April 2015, part of Asian ILC Omnibus Meeting
  - September 2015, „Workshop on ILC Infrastructures and CFS for Physics and Detectors“
  - March 2016, „Second Workshop on ILC Infrastructures and CFS for Physics and Detectors“
- Myself: 9 talks/presentations
- Fostered collaboration between all relevant groups for the design of the ILC Interaction Region
  - Both detector concepts: ILD and SiD
  - ILC Civil Facilities and Infrastructures Group
  - Local experts on civil facilities and campus planning
  - Linear Collider Collaboration Management
- Long-term working relation between European and Japanese groups on ILC infrastructures
- Next secondment planned for fall 2016 (~2 weeks)

# Sociology and Lessons Learned

- Collaboration with Japanese colleagues works best in personal meetings
- Contacts to local experts (campus designer, geologists, transport experts) requires local presence
- Local support for ILC is overwhelming (would be different in Germany, I guess):



# Culture

- Japan is a fascinating country with very friendly people
- Many things look very familiar to Europeans, but may still be very different...

