

MDI Common Task Group Phone Meeting

February 3rd 2011, 15:00 – 16:00 UTC

Present

P. Burrows, T. Markiewicz, M. Oriunno, T. Tauchi, H. Yamaoka, K. Buesser

Apology

A. Seryi, A. Hervé

Modifications to ILD Support Structure

K. Buesser reports on recent work that has been done by M. Joré to reduce the beam height of ILD to $\sim 8\text{m}$. In the current scheme, the beam height difference between SiD and ILD is $\sim 1.6\text{m}$. If a platform-based system would be chosen, this needs to be taken care of by, e.g., having two platforms with different thickness. Any effort to bring both detectors closer to the same beam height would be beneficial. It turns out, that it seems possible to reduce the beam height of ILD by about 1m. However this might result in the need for a modified design of the yoke endcap. Showstoppers could not be identified; ILD will continue to work on this design. More definite results are expected for the ALCPG workshop in March.

M. Oriunno points out that the final thickness of a platform is not fixed yet. The engineering design of a platform needs to be done taking into account the results of the vibrational analysis of the detector-platform system.

A different thickness of the platforms would result in different floor heights of the underground hall in the parking positions of the detectors. However, it is expected that this is not a major problem.

Platform Vibration Measurements and Simulations

M. Oriunno reports on the latest results of the measurements on the CMS shaft plug platform. Measurements have been taken at CERN with the platform supported only on the edges. The first main resonance mode has been identified at 20Hz, more resonances are visible at higher frequencies. Below 20 Hz the ground motion induced vibrations are a factor of three larger on top of the platform than on the ground. It is expected that on a quiet site, e.g. down in the CMS pit, the vibrational requirements could be met with a safety margin. The coherence of vibrations on the platform is rather good, especially between the points along the symmetry axis where the pillars of the ILD support system for the QD0 magnets would be placed.

Marco has developed an FEM model of the platform and could reproduce the measurements rather well. Therefore a benchmarked model of the platform is now available for studies of the whole detector-platform system. Additional measurements at SLAC with concrete blocks are under way to get a better understanding on the damping terms of concrete structures.

News on Japanese Site Requirements

T. Tauchi reports that the site studies for the two suggested Japanese ILC sites are starting. Especially for the site in northern Japan, the support from the local authorities is good and first results on a possible site layout might be available before the ALCPG workshop in March. He will try to deliver any information about possible access scenarios to the underground experimental facilities to the MDI CTG as soon as possible. First ideas about the impact on the detector assembly procedures could be discussed at the March workshop.

Tauchi-san reports that the vibration measurements and simulations on the steel-bar platform of the Belle detector at KEK are on-going. Yamaoka-san will participate in the Oregon workshop and will present results there.

Preparations for Oregon Workshop

T. Markiewicz and T. Tauchi are conveners of the MDI related sessions at the ALCPG workshop that takes place in March in Eugene, OR. They will foresee session time together with the CFS group to start the collaborative work on a common hall design and a common detector motion system, including an agreement on the vibration models for the platform studies.