

TESLA Technology Collaboration (TTC) Meeting

Tuesday, February 6, 2018 - Friday, February 9, 2018

Physics Department

Scientific Program

The Working Group charges for this TTC Meeting are:

WG 1: CW Operation Challenges: cavity, High Q (more for CW) - G. Wu (FNAL), J. Zhai (IHEP), A. Neumann (HZB)

Scope of this working group is to focus on the cavity operational challenges that will be faced by the future facilities based on CW SRF operation. Reports are expected on the statistics of cavity production and testing, preservation of the needed high Q values achieved in vertical testing to full accelerator modules qualification, comparison of results and recipes in different laboratories, and other topics related to the requirements for cavities for CW applications, for electron and proton/ion accelerators. Compare field emission loading experience in CW operation at medium gradients with pulsed operation experience at high gradients.

Project summaries should be avoided, and presentations should address key concerns and the technological solutions proposed to mitigate operation risks.

WG 2: CW Operation Challenges: couplers, tuners, modules - Y. Pischalnikov (FNAL), K. Yamamoto (KEK), R. Paparella (INFN)

Scope of this working group is to focus on the operational challenges in SRF components other than cavities that will be faced by the future facilities based on CW SRF operation. Particular challenges facing high current accelerators (such as ADS) should be addressed. Special approaches invented should be addressed.

Project summaries should be avoided, and presentations should address key concerns and the technological solutions proposed to mitigate operation risks.

WG 3: Commissioning experiences: LLRF, micro-phonics - C. Hovater (JLab), G. Huang (IMP), M. Omet (DESY)

LLRF systems represent a key component of present and future facilities based on SRF Linacs, both in pulsed and CW mode. Significant results have been obtained at operating accelerators and test facilities in all aspects of needed performances of LLRF systems: stable multi-cavity operation in vector mode, precise amplitude and phase stabilization, operation with long pulses, piezo-assisted Lorentz Force Detuning compensation, tight microphonic compensation, etc. This working group should capture the most recent activities in this field, with a special focus on the commissioning experience in small or large scale accelerator facilities, and lessons learned for the systems to be used in future facilities.

Project summaries should be avoided, and presentations should address key results obtained and the technological solutions developed.

WG 4: Pulse Operation Challenges: High-G, (High-Q), High-P, (more for Pulse - A. Grassellino (FNAL), K. Umemori (KEK), L. Steder (DESY)

Pulsed operation is still the operation mode for current short wavelength light source facilities, as the European XFEL, or for high current proton accelerators like the SNS and the ESS, and a few aspects are still challenging and require final experimental validation (e.g. handling of ms-long electron bunches at several GeVs, efficient operation of proton facilities with several-ms RF pulses with LFD control at 20 MV/m, field emission loading and reduction). Pulsed operation is also the only possible operation mode for large SRF facilities as the International Linear Collider, where high gradients and low dissipation is expected to reduce footprint and operational costs.

Project summaries should be avoided, and presentations should address key results obtained and the technological solutions developed.

Hot-topic: Performance recovery: Cavity, Modules, Linacs - E. Sharples (HZB), H. Sakai (KEK), P. Michelato (INFN)

Scope of this session is to focus on the methodologies developed in various labs to partially or totally recover the operational performances of SRF accelerators, or just components, in case of contamination due to a major accident or just a localized vacuum leak. This session will be preceded by an invited summary report, given by Emmy in the previous special session, from the recent workshop on SRF in a dirty machine.

Also in this hot-topic session summaries should be avoided, and presentations should address key concerns and the technological solutions adopted