

	Wednesday, 23 June 2021	Thursday, 24 June 2021	Friday, 25 June 2021
Registration and Welcome	7:30 - 8:00 K.Saito		
Session 1	8:00 - 9:00 Basics of RF Superconductivity and Nb Material A. Miyazaki (Uppsala University)	8:00 - 9:00 Fundamental Power Coupler and HOM Couplers E.Montesinos (CERN)	8:00 - 9:00 Beam-Cavity Interaction S. V. Andres (BNL)
Break	9:00 - 9:05	9:00 - 9:05	9:00 - 9:05
Session 2	9:05-10:05 RF Basic, TM Cavity Design and Fabrication S. Belomestnykh (FNAL)	9:05 - 10:05 Cavity Processing and Clean Assembly Popielarski (FRIB) L.	9:05 - 10:05 LLRF Control System M. Omet (KEK)
Break	10:05 - 10:10	10:05 - 10:10	10:05 - 10:10
Session 3	10:10 - 11:10 Low/Medium Beta Cavity Design R. E. Laxdal (TRIUMF)	10:10 - 11:10 Pushing Bulk Nb Limits Gurevich (ODU) A.	10:10 - 11:10 Basics for Cryomodule Design, Fabrication, and Assembly N. Bazin (CEA-Irfu)
Break	11:10 - 11:15	11:10 - 11:15	11:10 - 11:15
Session 4	11:15 - 12:15 Cavity Performance Testing: Vertical Dewar and Cryomodule J. T. Popielarski (FRIB)	11:15 - 12:15 New Material Beyond Bulk Nb Antoine (CEA/DRF/IRFU) C.	11:15 - 12:15 SRF Long Operation Experience and Issues to Be Resolved C. Reece (Jlab)

Session Title	Session Abstract	Session Title	Session Abstract
Basics of RF Superconductivity and Nb Material	This lecture will present the basics of superconductivity for new comers. It will emphasis the particularities of RF superconductivity and the main features of Nb material, now baseline material.	Pushing Bulk Nb Limits	This lecture learns the fundamental performance limits with SRF niobium cavities. Recent experimental efforts to push the limits will be introduce to give a hint for the new comers to challenge.
RF Basic, TM cavity Design and Fabrication	This lecture learns the cavity performance evaluation method at cryogenic temperature in a vertical Dewar. The cavity testing method in a real cryomodules is also introduced.	New Material Beyond bulk Nb	This lecture will describe new superconducting materials which have a potential to push the performance of SRF cavities beyond the limits of niobium. Examples include MgB2, iron-base superconductors, High Tc superconductors, A15 and B1 alloys. The research on developing SRF cavities with new materials will be introduced.
Low/Medium Beta Cavity Design	This lecture will cover the electrical design method of the low/medium beta cavities. The difference in the design between the TM mode cavity and the these cavity will be emphasized.	Beam-Cavity Interaction	The beam is accelerated in the cavities and induces harmonics (HOMs) at the same time. This lecture discusses problems and solutions due to the interaction of such beams and superconducting cavities from the beam dynamics point of view.
Cavity Performance Testing: Vertical Dewar and Cryomodule	This lecture learns the cavity performance evaluation method at cryogenic temperature in a vertical Dewar. The cavity testing method in a real cryomodules is also introduced.	LLRF Control System	To keep the high quality beam in a beam operation, low level RF control has a critical role. Especially, this is important for SRF cavity operation because of the high Q performance. This lecture will introduce LLRF for SRF cavities.
Fundamental Power Coupler and HOM Couplers	In this lecture, attendees will learn how to supply RF power into the cavity in order to accelerate the beam, and how to design and fabricate the device (input coupler). The impact of the high order modes on beam will be briefly explained. The design and manufacture of the devices (HOM coupler/dumper) to extract HOMs will be introduced.	Basics for cryomodule design, fabrication, and assembly	In this lecture, attendees will lean the design, manufacture, and assembly of cryomodules that house superconducting acceleration cavities. Material choice, thermal shielding, magnetic shielding, and cavity arrangements will be discussed.
Cavity Processing and Clean Assembly	This lecture will introduce the surface treatment methods for Niobium cavities:BCP, EP, vacuum annealing, HPR, and etc.. The clean cavity assemble method and the facility will be also introduced.	SRF long operation experience and issues to be resolved	SRF cavity is very sensitive on the surface contamination. During a long term operation, various problem will happen and deteriorates the performance gradually. This lecture will introduce such problems and discuss countermeasures.