

RF activities concerning S-band high-gradient applications at PSI

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The RF activities related to high-gradient applications at PSI are mainly focused on the completion of the soft X-ray Athos beamline in SwissFEL with the new X-band diagnostic system that is under installation and on the upgrade of the SLS pre-injector linac in the framework of the new SLS2 project. A new simplified injector concept for SLS2 linac based on new S-band structures has been developed as possible substitute of the existing one. Furthermore, PSI is part of an FCCee Injector collaboration and, in this context, is in charge of a development of a positron source that will make use of large acceptance standing wave structures under study for the capture linac. This talk gives an overview of the design of new passive RF components in X-band for the Athos diagnostic system, the concept of a simplified injector based on high gradient S-band structures and the design of high-gradient S-band standing wave cavities for the FCCee e+ capture linac and for the e+ production experiment at PSI.

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