

Helsinki Institute of Physics (HIP) at University of Helsinki (UH) contribution to CLIC

HIP and UH are interested in various accelerator technology challenges related to the application of X-band technology in CLIC. Design of efficient RF accelerating structures for CLIC components rely on good understanding of fundamental mechanisms causing surface modification under high electric and electromagnetic fields. HIP and UH play a leading role in multi-scale modelling of the relevant processes. The current focus of the study is on surface diffusion affected by strong electric fields, which explains self-growth on surface field emitters. Moreover, we work on the dislocation dynamics under the surface in the presence of pulsing fields at the surface with the collaborators from the University of Jerusalem and CERN.

The total contribution of HIP and UH to the CLIC study in 2023 will be about 1.5 FTE.