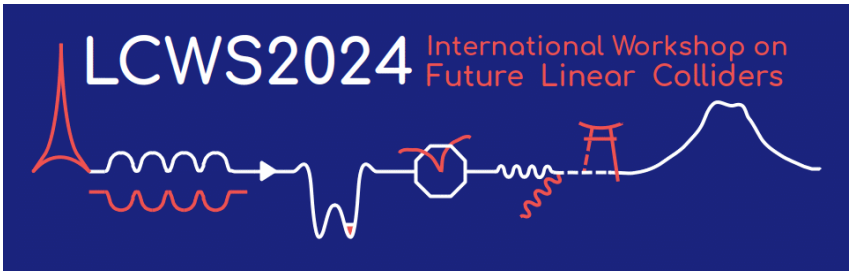

Contribution ID: **120** Type: **Oral presentation (remote)**

Multi-bunch beam dynamics studies in the C3 main linac

Wednesday 10 July 2024 09:00 (20 minutes)

The Cool Copper Collider (C3) is a novel electron-positron linear collider concept that utilizes a cryogenically-cooled copper accelerator technology. It is designed to accelerate 133 bunches of electrons/positrons from 10 GeV to 125 GeV while preserving the beam quality. In order to achieve the target beam's luminosity, careful studies of the long-range higher order modes (HOM) wakefield effects must be taken into account for the design of the accelerating structure. Here we present the analysis of the beam dynamics studies for the long range HOM wakefields. We will show the accelerator operating parameters and important frequency bands that deteriorate the beam. After that, we present detuning and damping results which are then used to guide the design of the accelerating structure.

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Presenter: TAN, Wei-Hou (SLAC)

Session Classification: Beam Dynamics

Track Classification: Accelerator: Beam dynamics