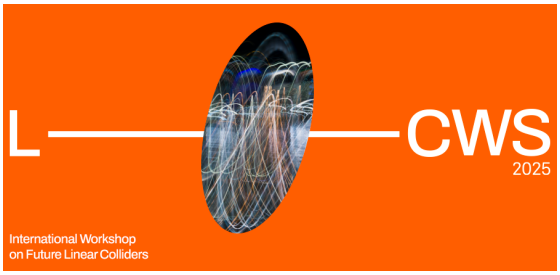

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The re-optimization of the SiW-ECAL for photon measurements (remote)

Wednesday 22 October 2025 10:20 (20 minutes)

The high-granularity Silicon-Tungsten Electromagnetic Calorimeter (SiW-ECAL) was proposed as early as around the year 2000. The project is completing its technological prototype phase, and is now advancing toward an engineering prototype, in preparation for any future electron-positron collider.
Building upon insights from previous studies considering recent advancements in electronics and the emergence of the 5D calorimetry concept, a re-optimization the SiW-ECAL geometry could enhance its performance in both energy and time measurements.
This talk presents preliminary results on the optimization of the SiW-ECAL. For energy reconstruction, various algorithms have been developed and compared. For time measurement, a dedicated time digitiser is introduced with simulation and test beam results. Different geometric configurations of the SiW-ECAL were simulated and analysed, and the optimisation was derived by comparing their energy and timing performance.

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