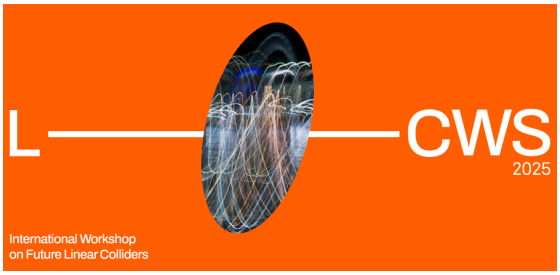

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Development of an optimisation code of a pulsed Solenoid for positron matching

Tuesday 21 October 2025 12:50 (20 minutes)

The development of cutting-edge technologies has spurred the exploration of a pulsed solenoid as an effective optical matching
device for future positron sources. A prototype has been manufactured,
and the magnetic field distribution will soon be characterized through dedicated measurements. On the base of this design,
a specialized simulation code enabling Bayesian optimization of a parameterized solenoid geometry has been developed.
These geometries are simulated in COMSOL to generate magnetic field distributions, which are then used to track positrons
through the initial accelerator structure. The ultimate aim is to refine the solenoid's shape to maximize positron yield.
This presentation will outline the prototype design and the integrated COMSOL-based Bayesian optimization framework targeting
enhanced positron capture efficiency.

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