

Simulations of an electro-optical in-vacuum bunch profile monitor and measurements at KARA for use in the FCC-ee

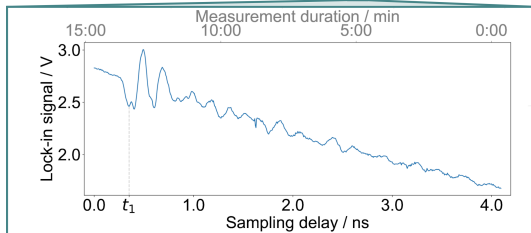
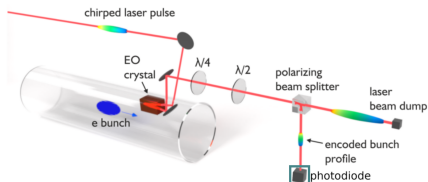
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Electro-optical diagnostics at KARA

Baseline for the development of EO diagnostics for FCC-ee



Electro-optical near-field monitor at KARA

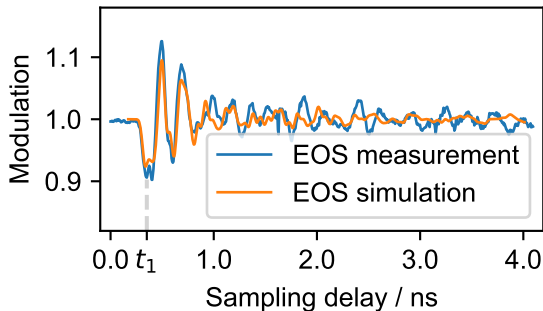
- **EO spectral decoding (EOSD):** Single-shot turn-by-turn measurement of the longitudinal bunch profile
- **EO sampling (EOS):** Scan of the wakefield revealing the temporal overlap.

Goals

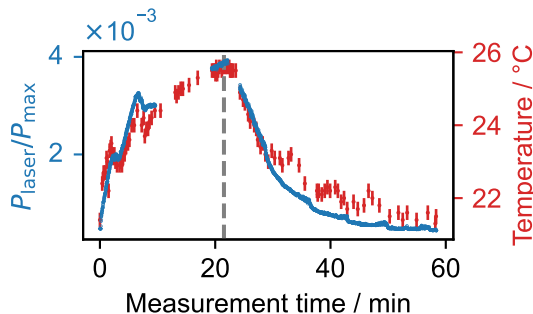
- Comparison of **KARA measurements and simulations**, which are used for **EO diagnostic development for FCC-ee**
- Investigate the **slow signal drift**, which is likely caused by **heating effects**

EO simulation and effects of crystal heating

EOS simulation and KARA measurement



Correlation of crystal temperature and laser signal



I am happy to discuss more at my poster.
Thank you for your attention!