

# LUXE Gamma Flux Monitor a.k.a. Dump Leakage Calorimeter



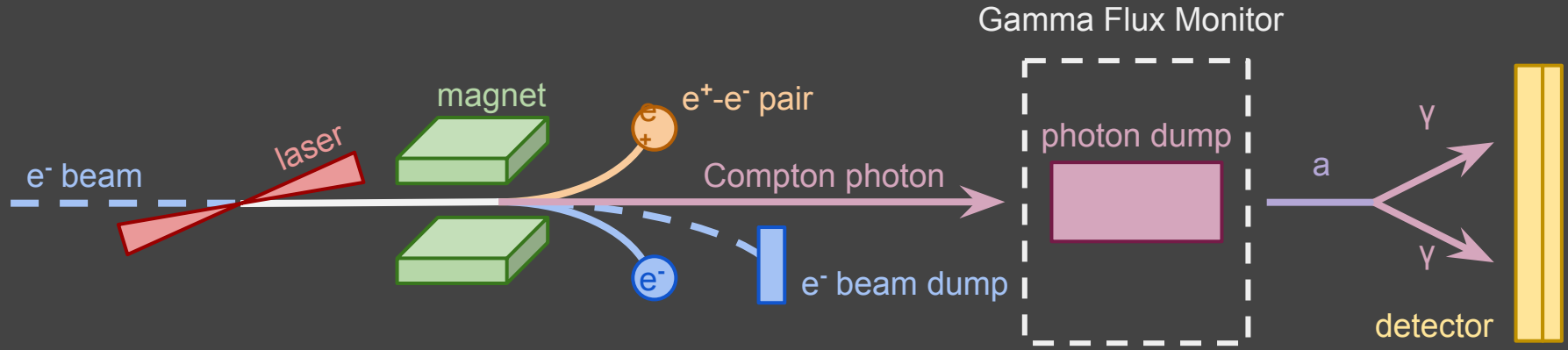
## Status KW 9

## LUXE

**Ivo Schulthess**, on behalf of the dump leakage calorimeter working group  
26<sup>th</sup> of February, 2024, LUXE SAS Meeting  
Deutsches Elektronen-Synchrotron DESY

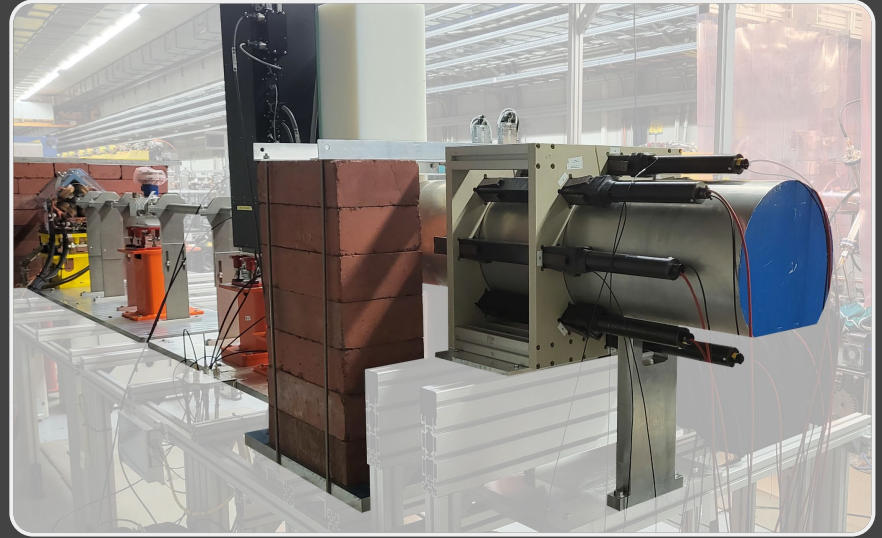
# Leakage Calorimeter

## Setup and Purpose at LUXE



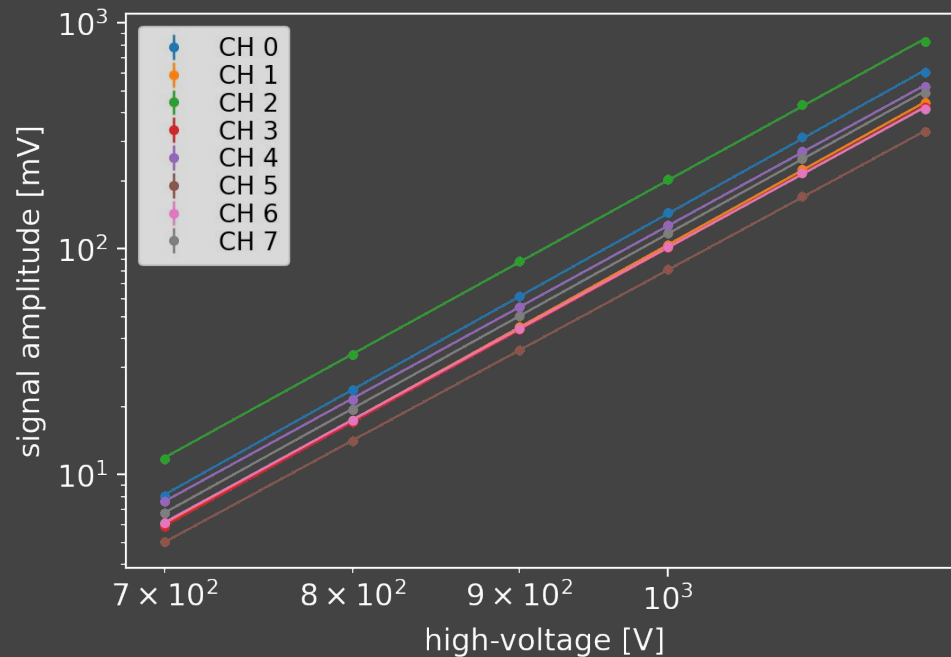
# Leakage Calorimeter

## Setups at DESY-II and FLASHForward



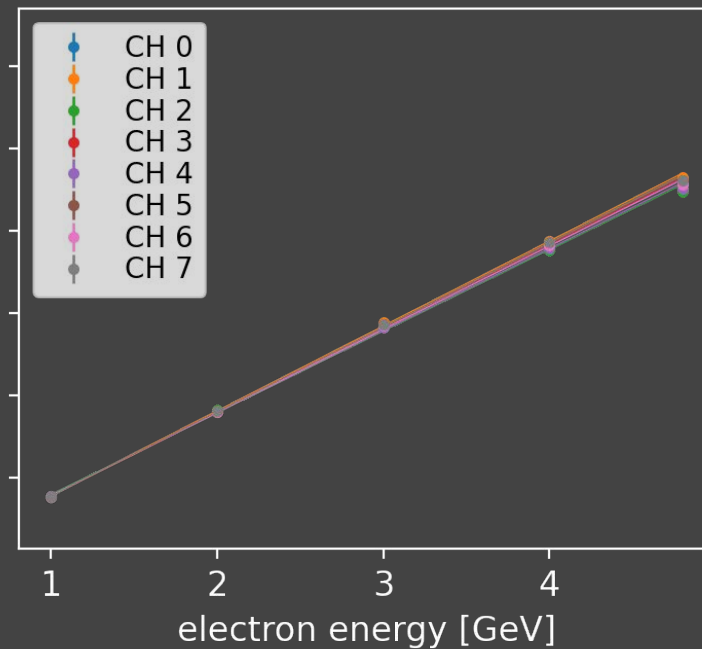
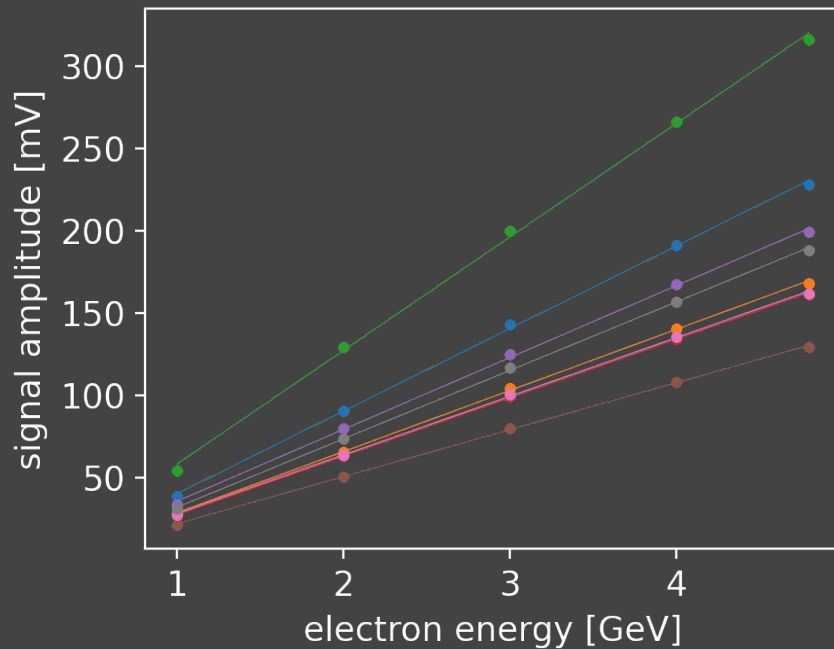
# Leakage Calorimeter

## High-Voltage Calibration



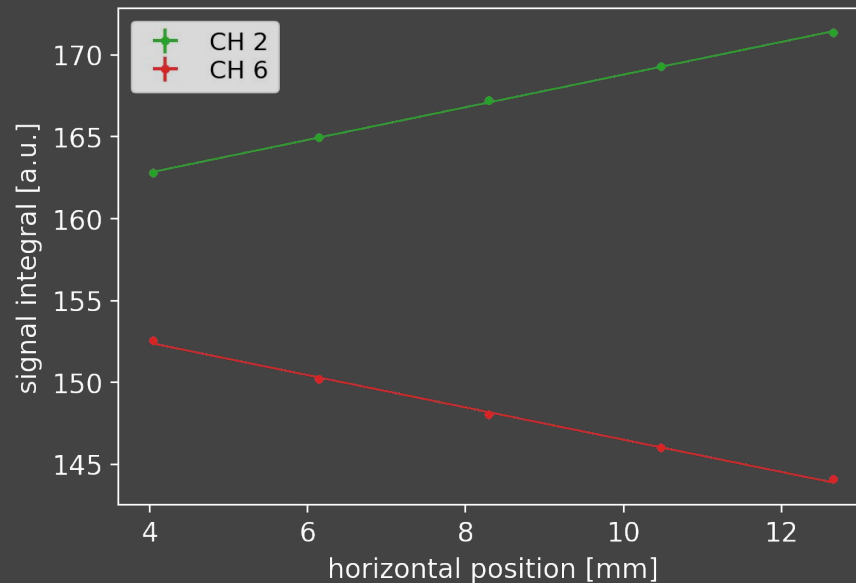
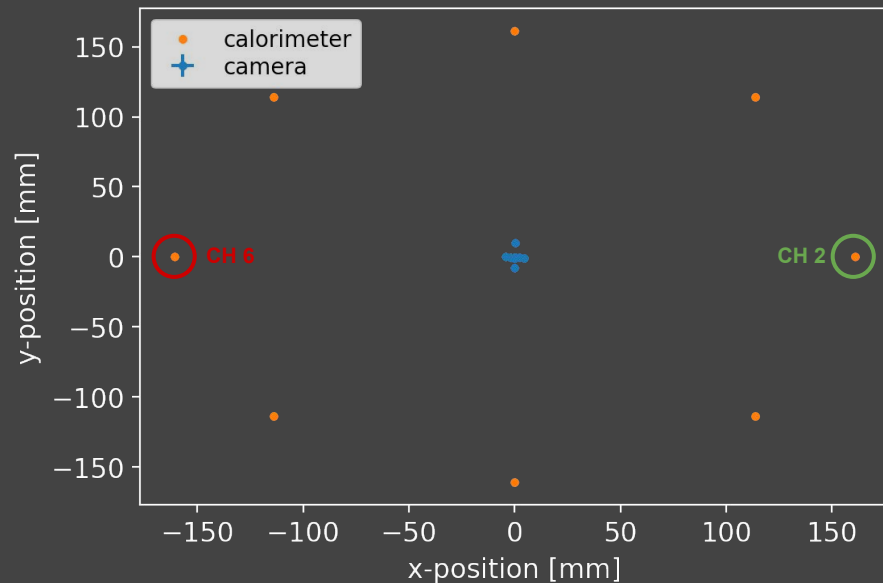
# Leakage Calorimeter

## Energy Calibration



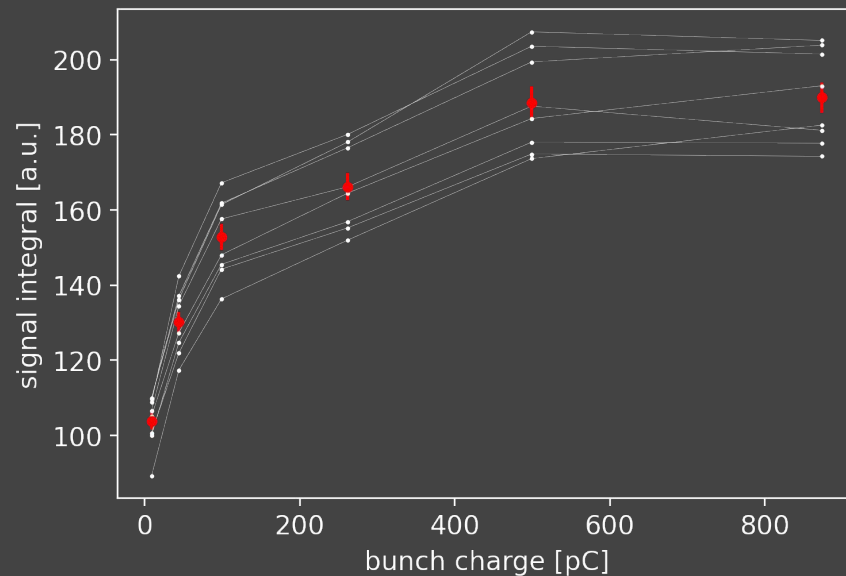
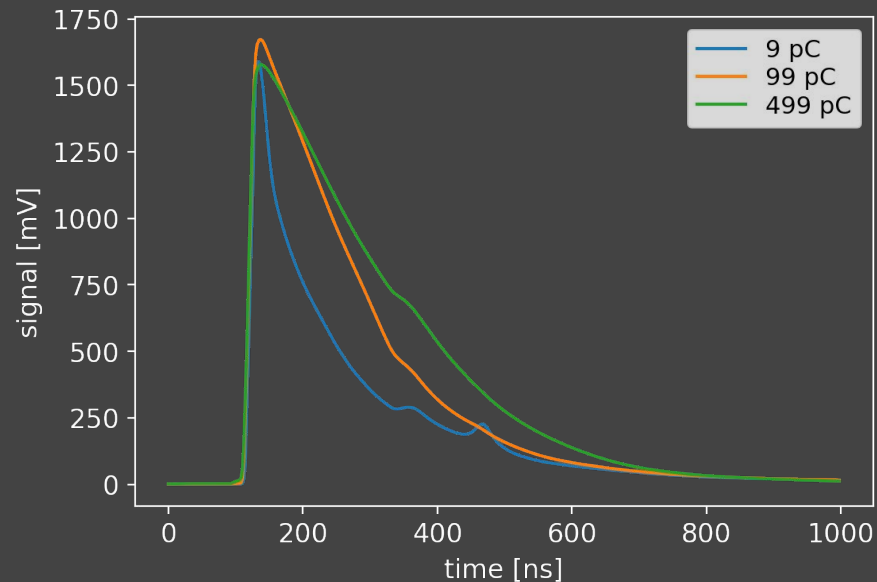
# Leakage Calorimeter

## Bunch Position



# Leakage Calorimeter

## Bunch Charge



# Leakage Calorimeter

## Summary and Outlook

- performed calibration measurements at the DESY-II test beam facility
- measurements from November 2023 at the FLASHForward dump look promising
- PMTs seem saturated
  - non-linear signal response
  - absolute position reconstruction not possible
- beamtime in the beginning of March to test PMT high-voltages
- upgrade with UV filter foil at the end of March

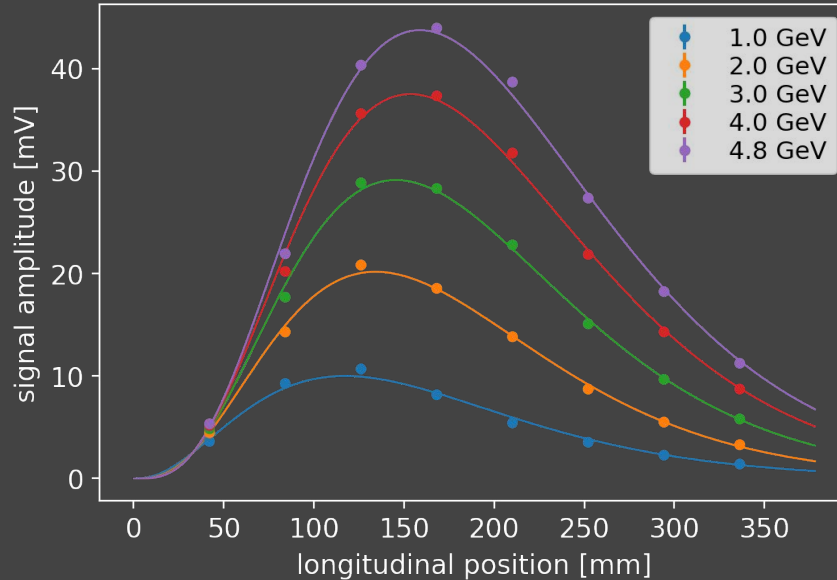




# Backup

# Leakage Calorimeter

## DESY-II Shower Profile / Molière Radius



$$A = A_0 \cdot z^a \cdot e^{-b \cdot z}$$

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