

# CMS-ECAL test beam report

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On behalf of the CMS-ECAL upgrade group.

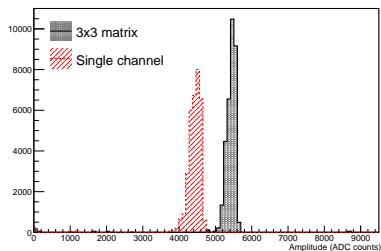
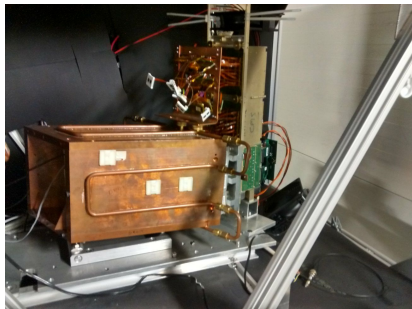
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# Test beam setup and goals

- **Test prototype of HL-LHC ECAL readout electronics:**
  - VFE with new trans-impedance amplifier and ADC running at 160MHz.
  - Assess time resolution and pulse reconstruction for discrimination of scintillation vs hadronic interaction in APDs.
- **Setup:**
  - 5x5 CMS-ECAL matrix (PbWO + APD).
  - VFE and FE prototypes tested separately.
  - High purity electron beam from SPS,  $20 < E < 200$  GeV.

# Prompt feedback

- **Thanks to an excellent beam availability and tuning we successfully completed our TB program:**



- Prompt analysis already shows good quality of data.

# Minor issues

- In the first few 2 days access to beam area required manual intervention from CCC to put all safety elements in correct state.
- Noticed problems when changing beam-line setup (i.e. change in energy): most magnets had to be set to “Beam ref.” manually.

# Summary

- Excellent TB period:
  - We have a lot data to analyze that covers the program we foresaw for the TB.
  - Early TB allow us to better prepare for June and October periods.