

Digital ECal Status

- Proof of principle demonstrated (two generations)
 - Good “traditional” calorimeter response
 - Superior granularity (PFA, PID, ...)
 - Existing technology sufficient for FoCal, but detector principle has very high potential beyond
- Interested groups:
 - UK (Birmingham, ...): trying to leverage funds ...
 - NL (Utrecht/Nikhef, ...): trying to keep effort alive, no significant investment on medium term
 - new groups needed to make significant next R&D step

Future Project

- Exploit EPICAL-2 prototype
 - Analysis of existing data (DESY/SPS)
 - EM shower physics analysis
 - Identify areas for improvement in next generation
 - New test beam measurement (PS?)
- Develop third generation with dedicated sensor
 - Advanced sensor properties:
 - Fast – compatible with event rates/provide trigger(?)
 - Timing(?) – resolve pile-up
 - Semi-digital(?) – resolve saturation
 - On-chip intelligence: pseudoanalog pixel sums, zero suppression, clustering(?) – reduce data rate
 - Integration issues/compactness
 - Connectivity
 - Cooling(?)
- MC simulation and reconstruction
 - Develop PFA for pixels
 - ...