LLT Calo

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Introduction

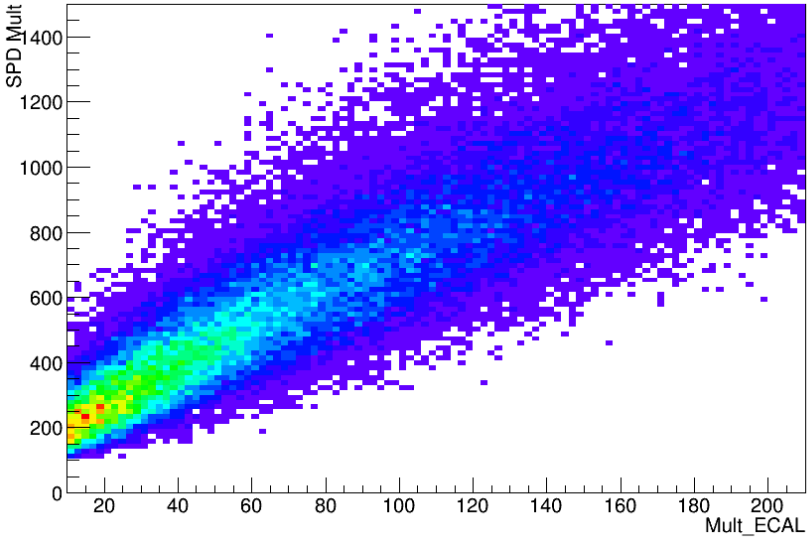
- Two points for discussion:
  - Multiplicity quantities to replace SPD multiplicity
  - Data transferred from ECAL/HCAL Front-End to TRIG40

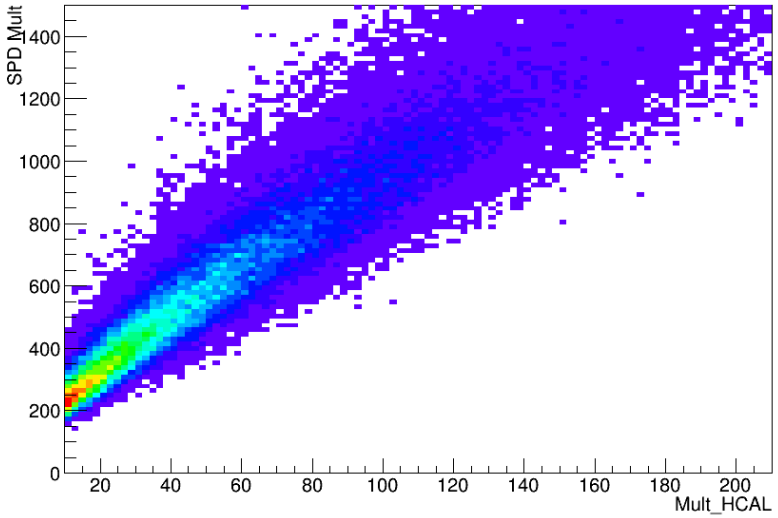
Multiplicity

- SPD not in upgraded detector, need quantities to replace the SPD multiplicity as Global Event Cut to remove early busy events.
- Look at the quantities:
  - Mult_ECAL = number of cells with L0ADC > 2
  - Idem in HCAL
  - Since this would be implemented in TriggerFPGA, only L0ADC is available there

Multiplicity

- In NoBias events taken end of 2012, plot of Mult_ECAL and Mult_HCAL as a function of the SPD multiplicity:





- Do you agree to use this quantity ?
- For more flexibility, the threshold (>2 here) should be made programmable by ECS.

Information from FEB to TRIG40

- 8b MaxET : Trig40 selects the highest over all inputs
- 8b SumET : Trig40 adds all inputs
- 6b Mult_ECAL or Mult_HCAL : Trig40 adds all inputs
- 12b BXID
- 5b local address
- 4b FEB ID
- 5b Crate ID → see next page

Addresses

- The TrigFPGA on the FEB computes a local address (cell id between 0 and 31)
- A more detailed address is needed in the TRIG40:
  - To match HCAL and ECAL related cells to be able to sum their ET (was done in TVB before)
  - Absolute « official » address needs to be build for each address sent to « L0DU » and to the DAQ, in the format [Detector, Area, Row, Col] (was done in Selection Boards before, using Local Address + Crate ID + FEB ID)