



Triggering on displaced decays in ATLAS

Dan Ventura

U. Washington, Seattle

17 Nov 2007

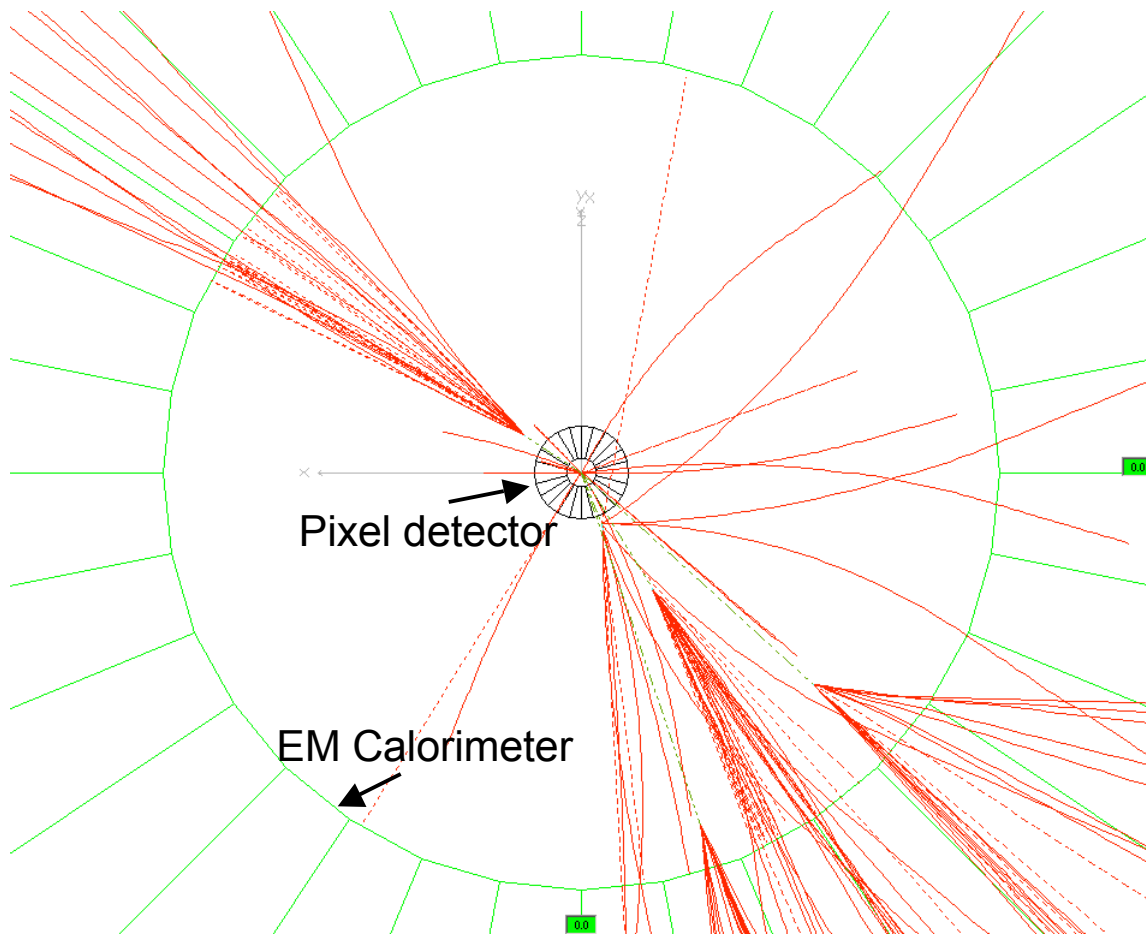


Hidden Valley Working Group

- University of Rome, La Sapienza
 - Guido Ciapetti
 - Daniele Depedis
 - Carlo Dionisi
 - Stefano Giagu
 - Marco Rescigno
 - Antonio Sidoti
 - Lucia Zanello
- University of Genova
 - Carlo Schiavi
 - Fabrizio Parodi
- University of Washington, Seattle
 - Laura Bodine
 - Henry Lubatti
 - Giuseppe Salamanna
 - Daniel Ventura
- **Theoretical Consultants**
 - Barbara Mele U. Rome 1
 - Matt Strassler Rutgers



Decays in the inner detector and calorimeters



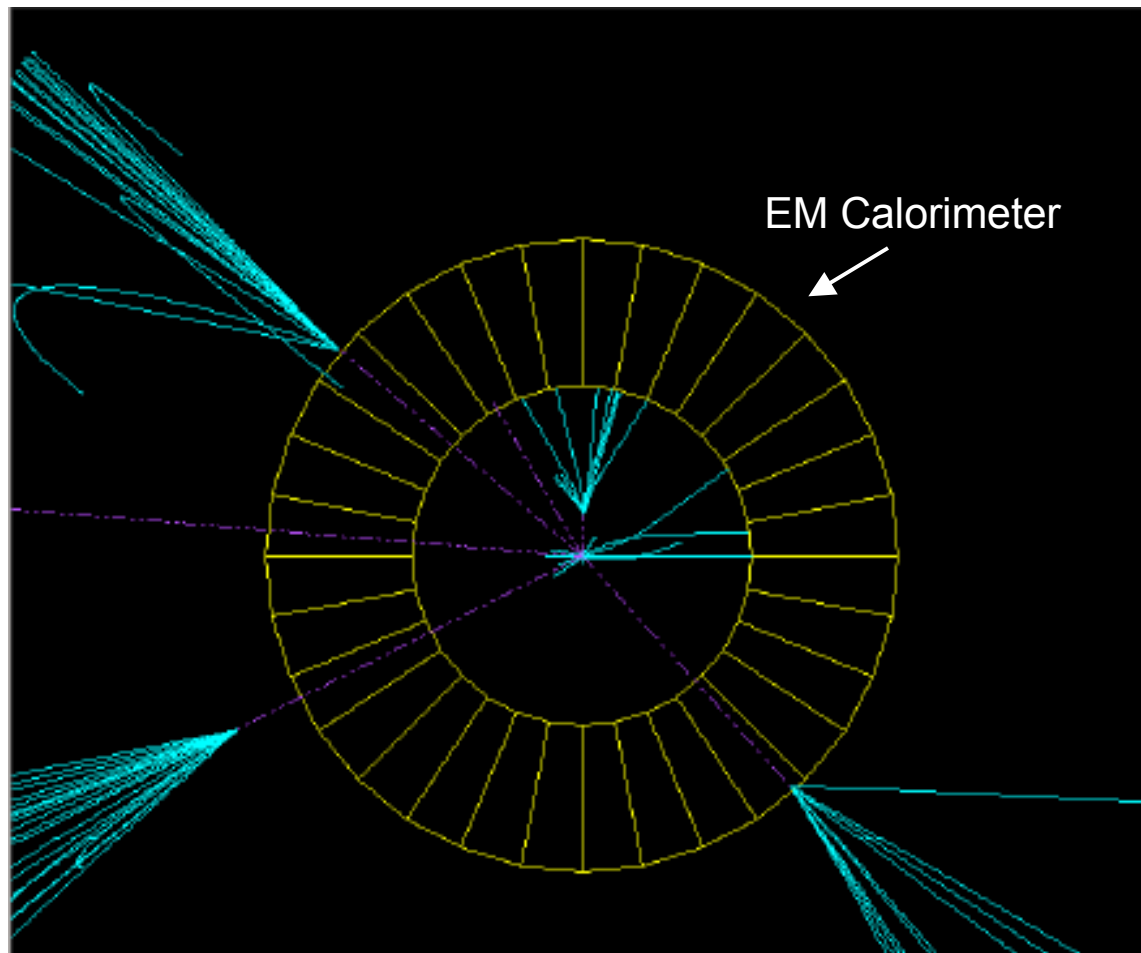
Possible trigger object
**Trackless jets that
contain a muon**

Event generator: Hidden Valley Monte Carlo 0.5
M. Strassler to appear

Display program: Daniele Depedis



Decays in the Calorimeters



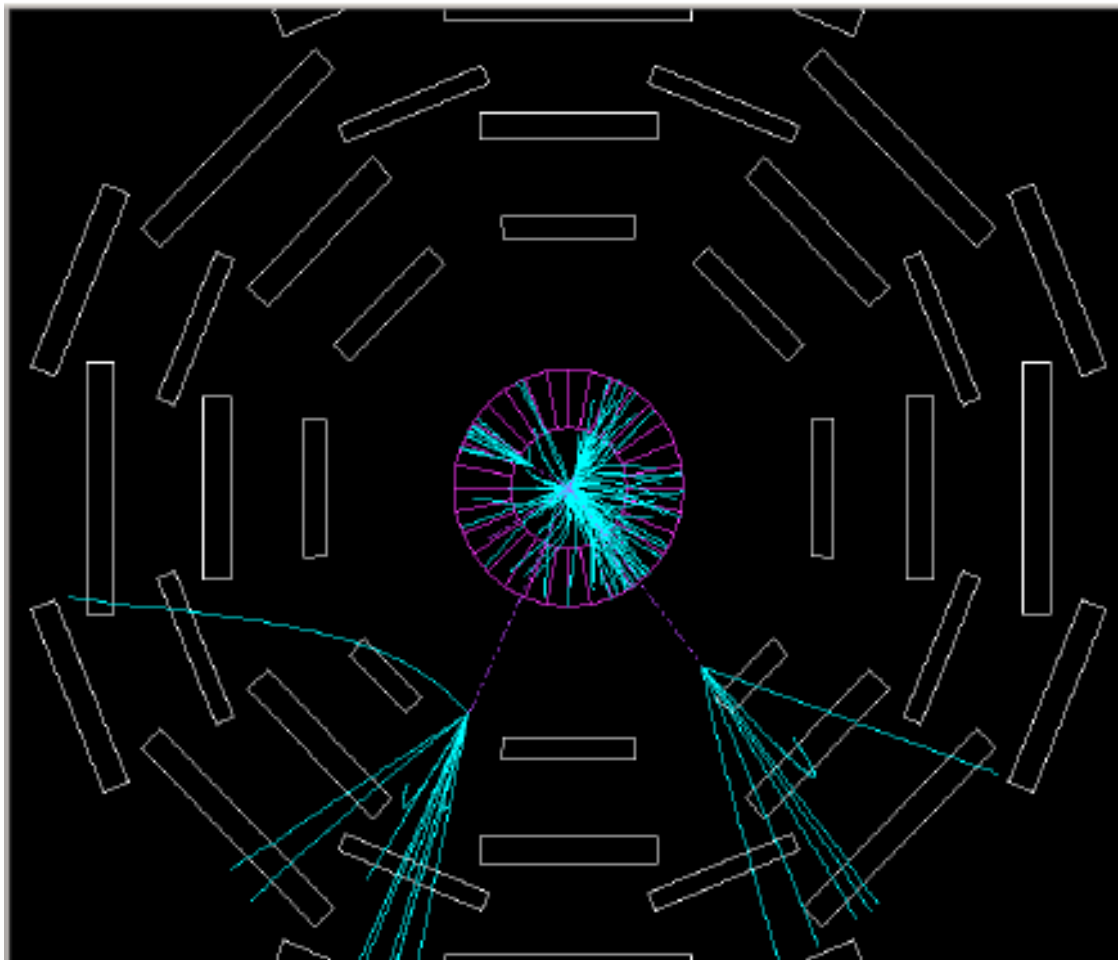
Possible trigger object:
Jets with large $E_{\text{HAD}}/E_{\text{EM}}$

Event generator: Hidden Valley Monte Carlo 0.5
M. Strassler to appear

Display program: Daniele Depedis



Decays in the Muon system



Possible trigger object:
**Exceptional # of clustered
level-1 muon triggers**

Event generator: Hidden Valley Monte Carlo 0.5
M. Strassler to appear

Display program: Daniele Depedis



Level 2 trigger objects

- Decays in the Inner Detector (10 - 400cm)
 - Jet with no tracks, that contains a level 1 muon
- Decays in the Calorimeters (200 - 400cm)
 - Unique HCAL to ECAL ratio
- Decays in the Muon System (400 - 700cm)
 - Anomalous number of level 1 muon triggers