

# **EMC Background** **Elba 2011 Production**

**SuperB Background Session**

**XVII SuperB Workshop and Kick Off Meeting**  
**La Biodola (Isola d'Elba)**

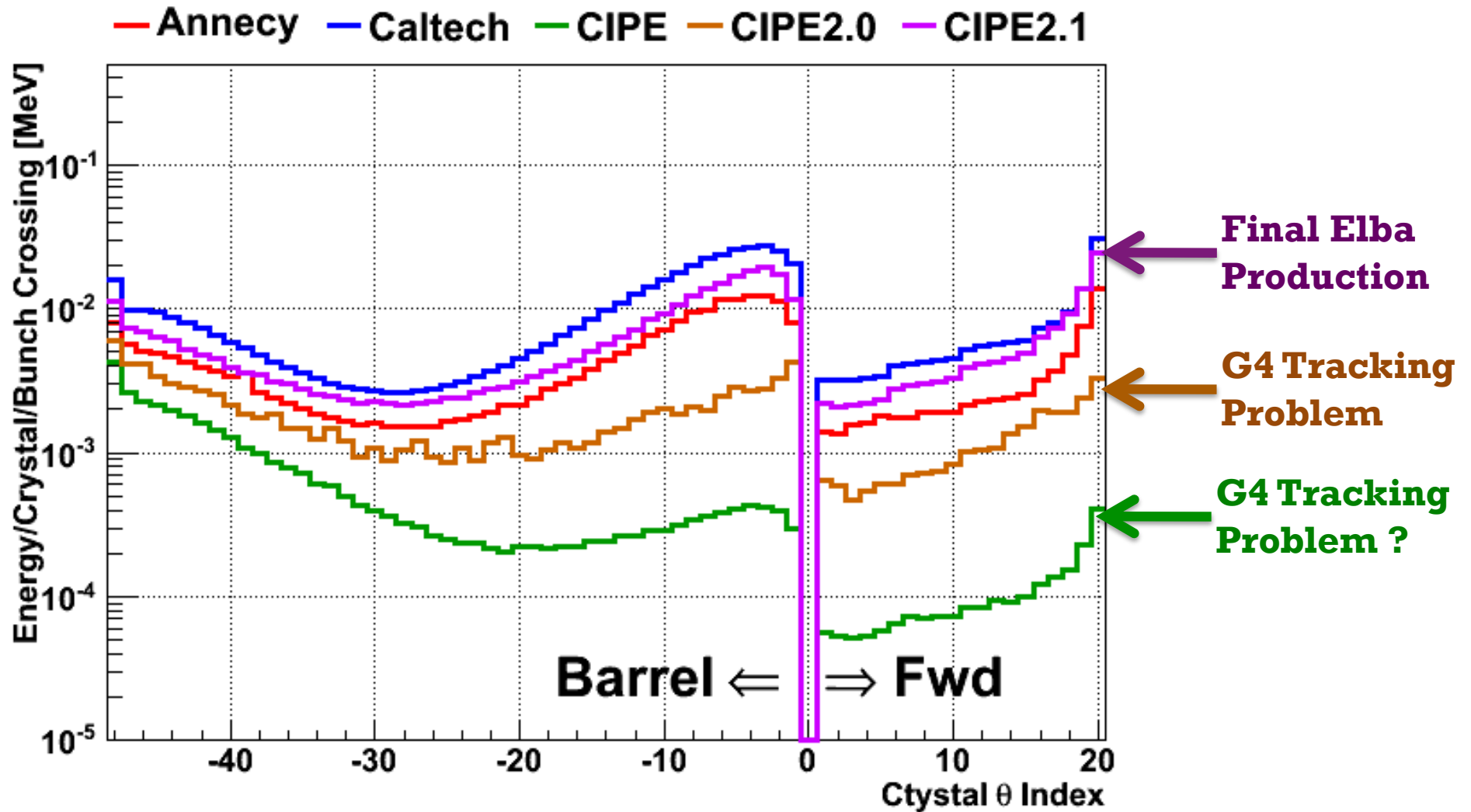
**30/05/2011**

**S. Germani**  
**INFN Perugia**

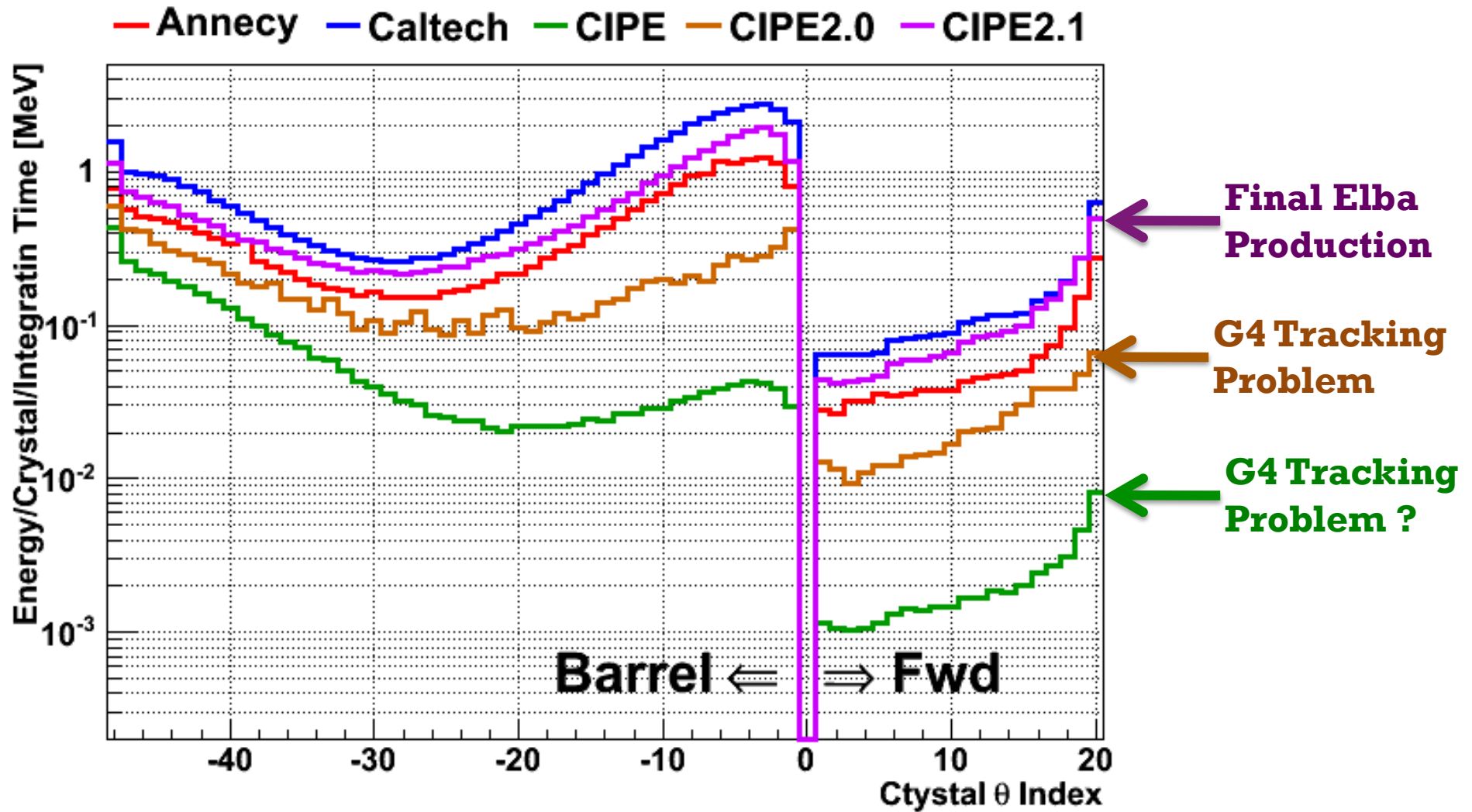
# Outline

- Compare background levels for different background productions
  - E vs Theta
  - Fluxes and spectra at EMC boundary
  - Hit multiplicity
  - Cluster multiplicity

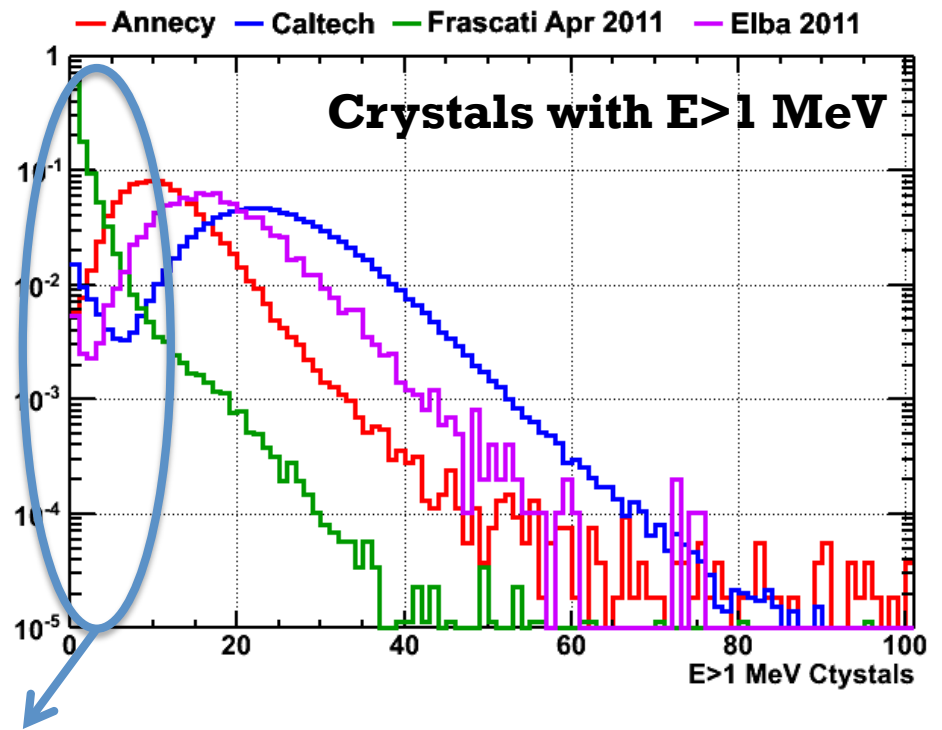
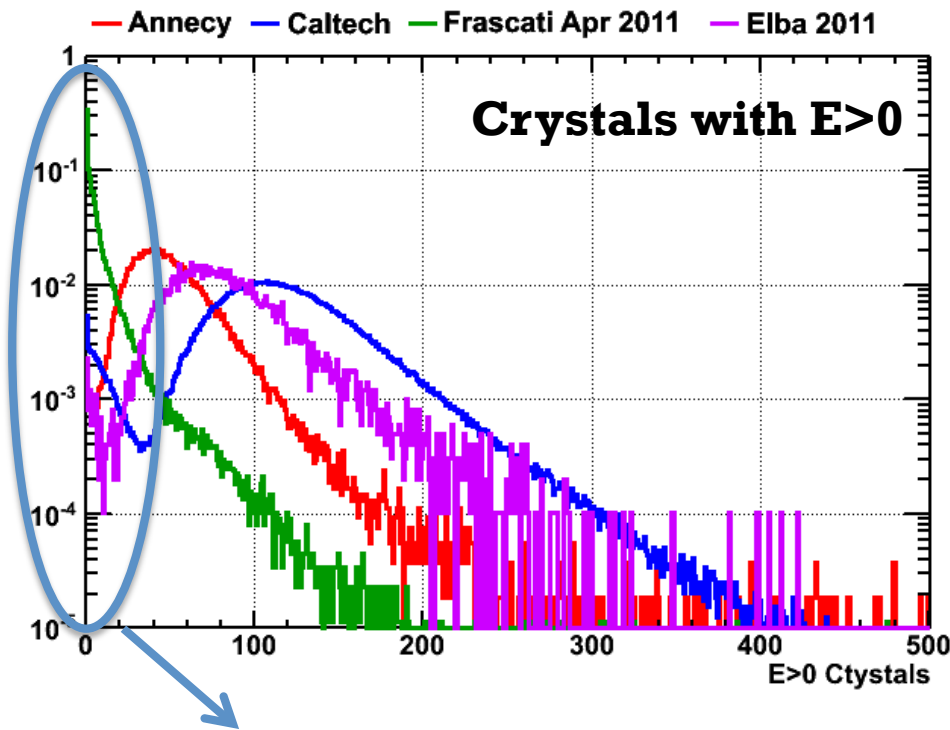
# Energy / Crystal / BC



# Energy / Crystal / Integration Time



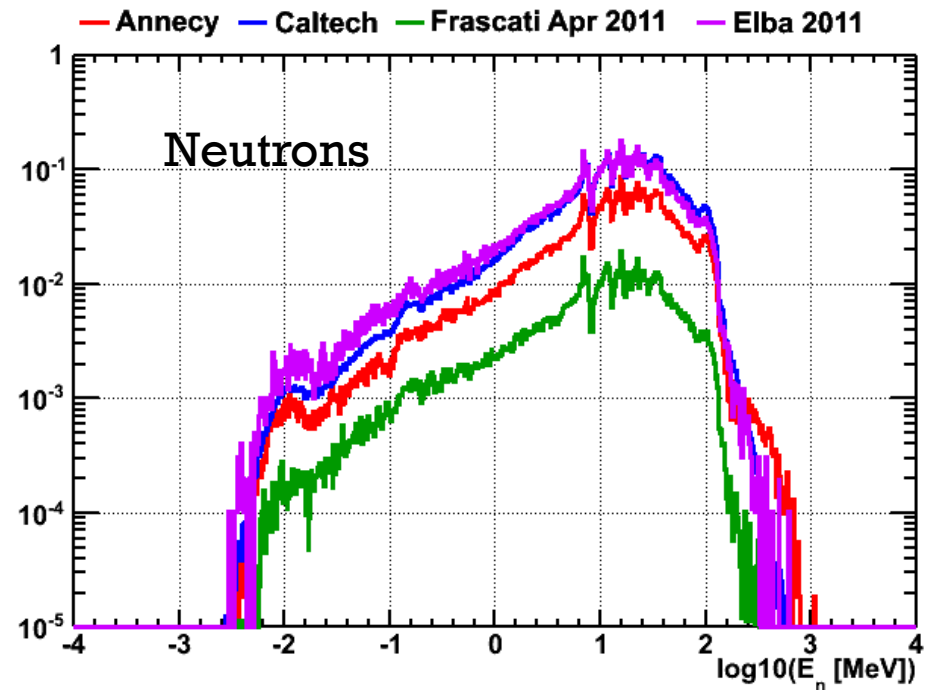
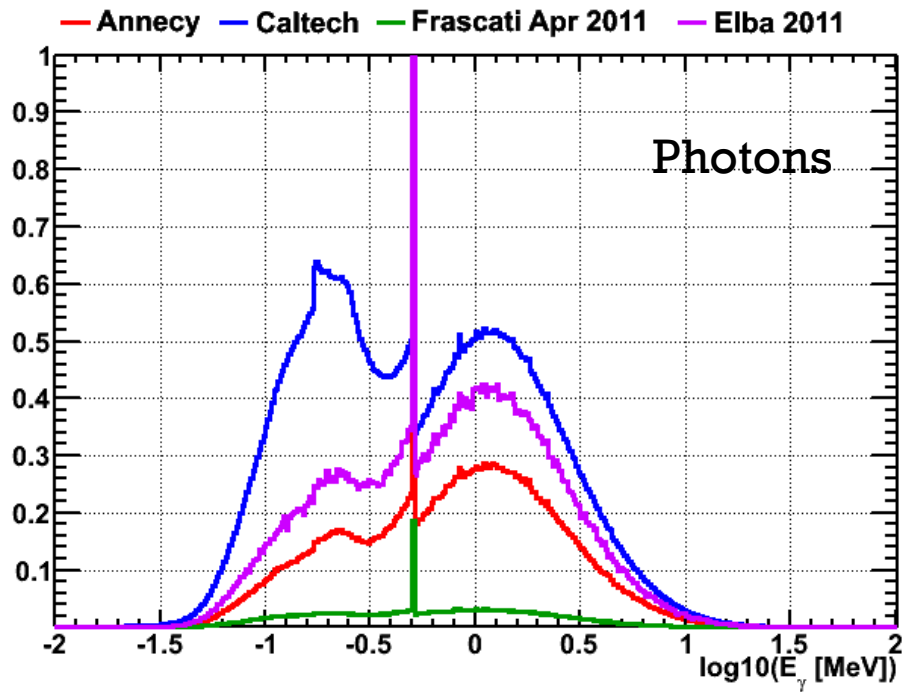
# Number of EMC Hits / Bunch Crossing



**This low multiplicity events behaviour was never really understood  
My GUESS is they are related to the Genat4 crash issue.  
Need to be investigated**

# Particles energy spectra

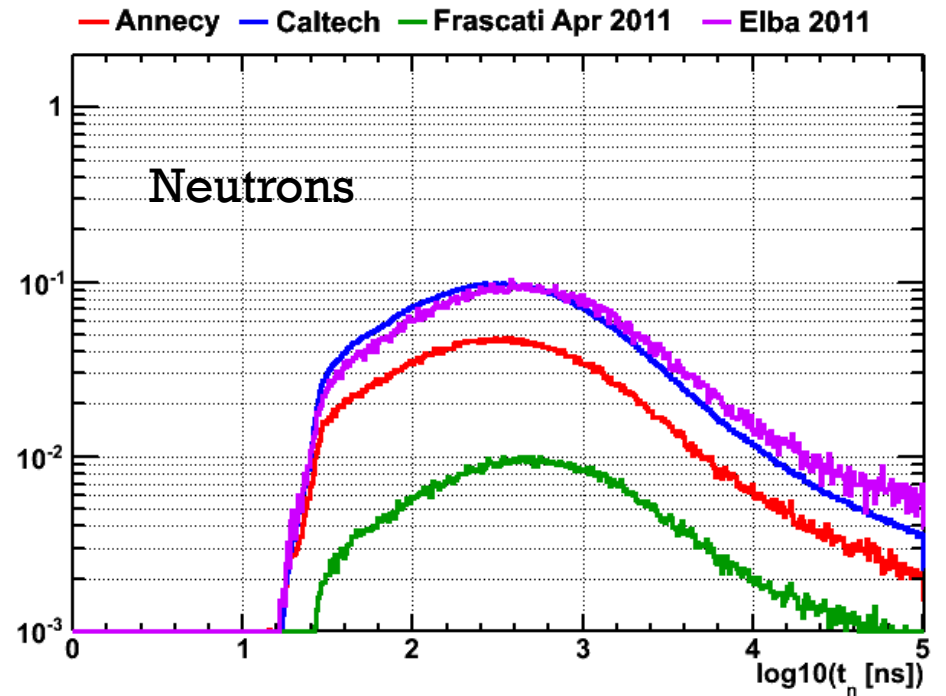
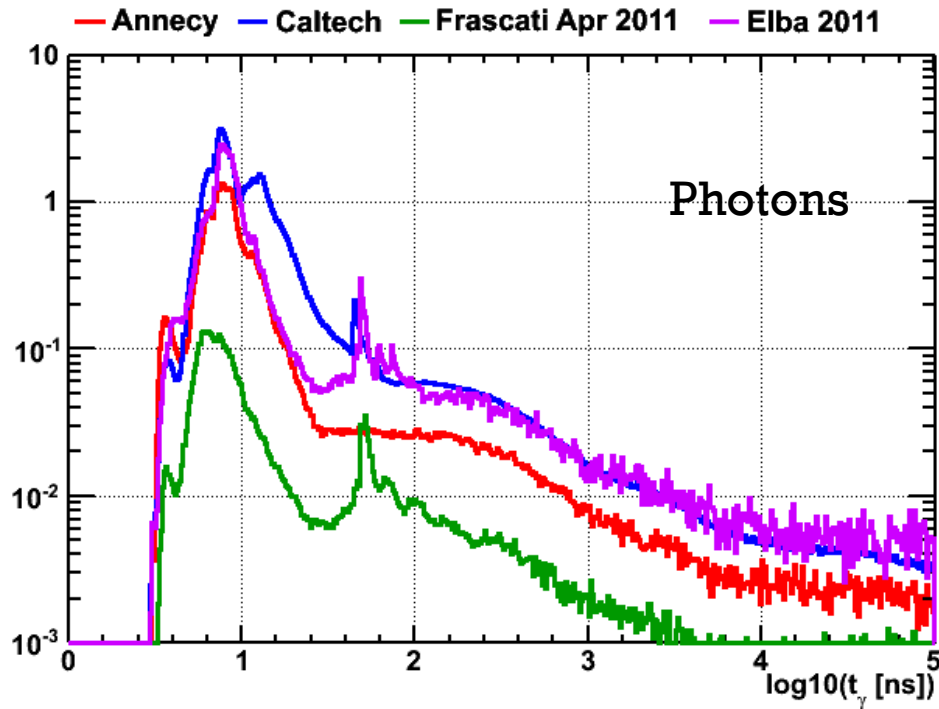
Momentum spectra for particles crossing the EMC volume boundary



Productions show similar shapes

# Particles arrival time

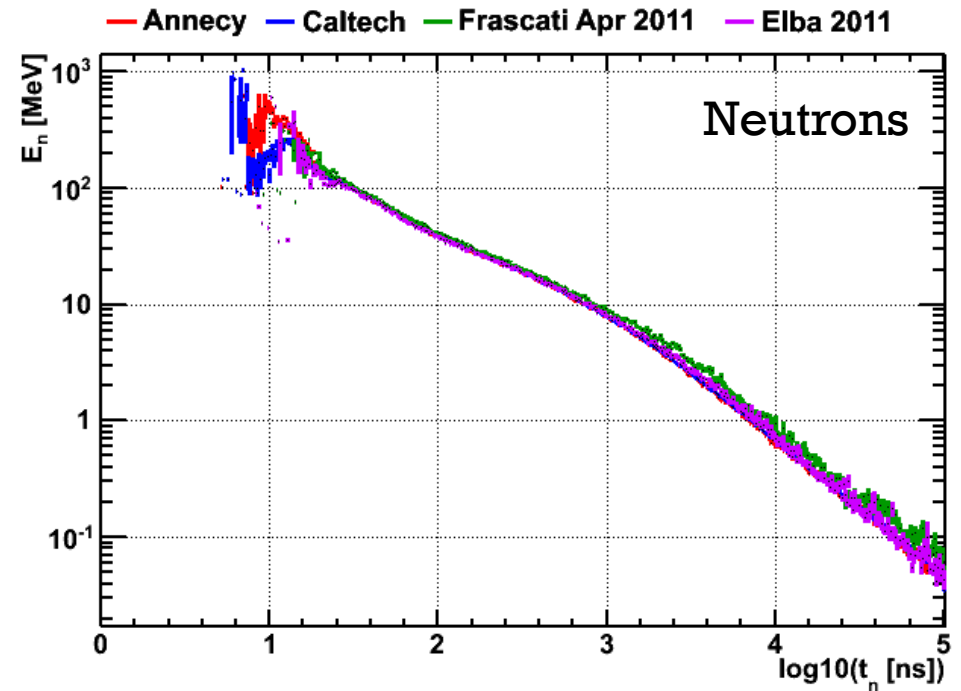
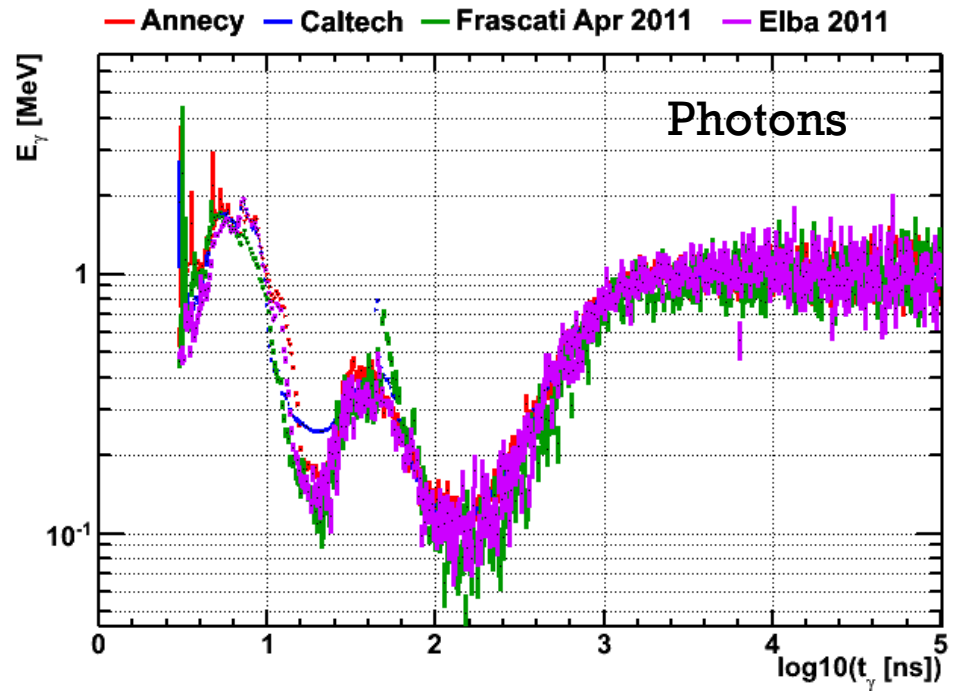
Arrival time for particles crossing the EMC volume boundary



Productions show similar shapes

# Particles energy vs time

Mean energy vs time for particles crossing the EMC volume boundary

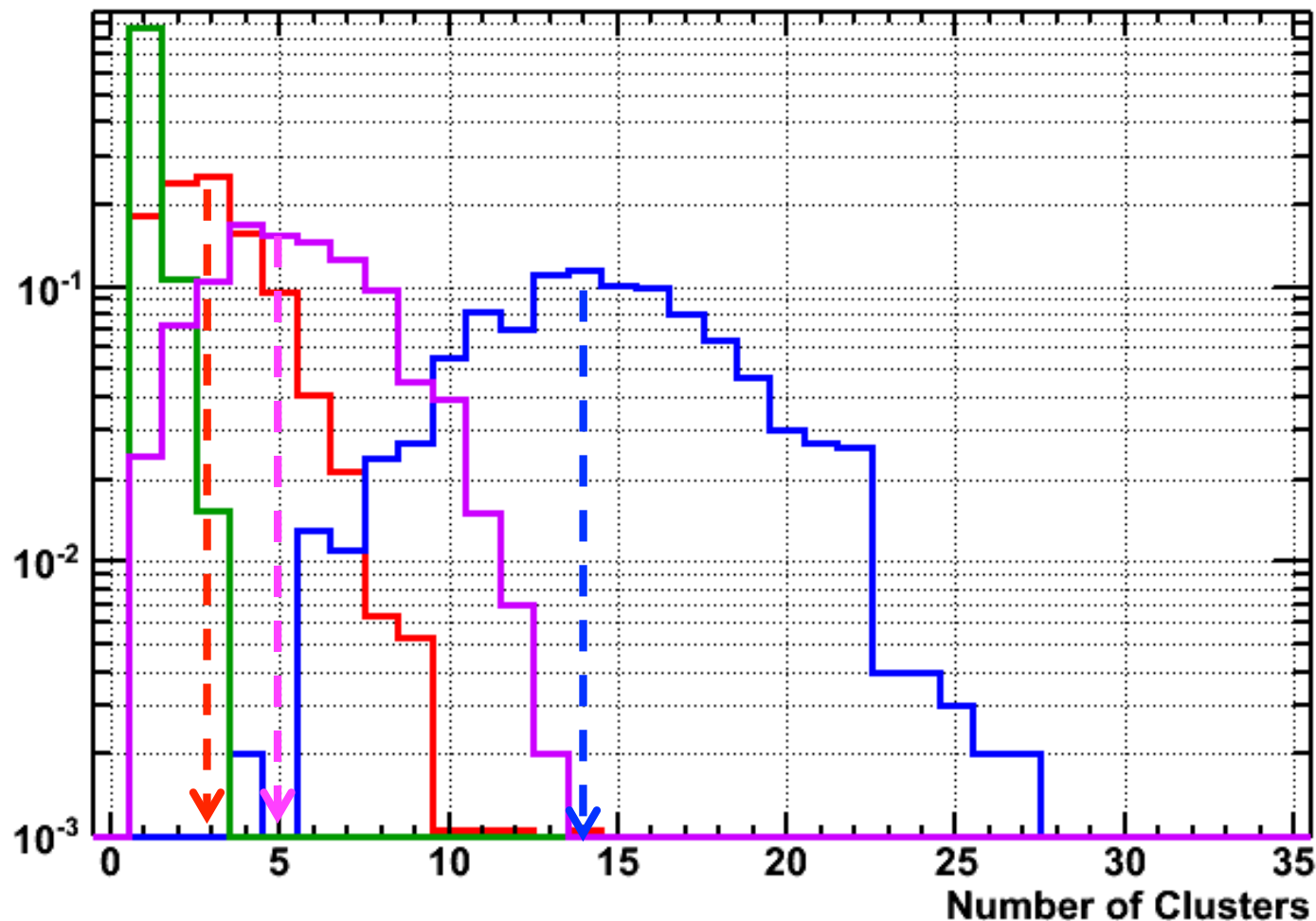




# Cluster multiplicity

EMC Clustering algorithm run on different background production with same algorithm

— Anney — Caltech — Frascati Apr 2011 — Elba 2011



**Peak Multiplicity**  
→ Anney : 3  
→ Caltech: 14  
→ Elba : 5

# Conclusions

- New Elba production has a background level between Anecy and Caltech
- Hit and cluster multiplicity consistent with background levels