Deuteron and Proton Production in Pb+Pb Collisions at 40, 80 and 160 AGeV (Centrality and Energy dependence)

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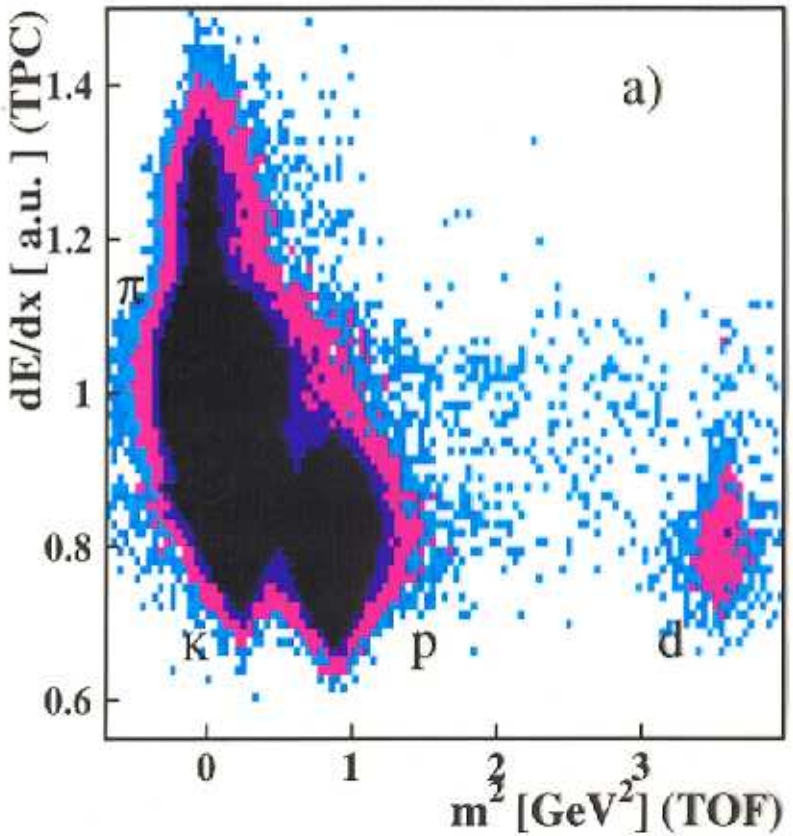
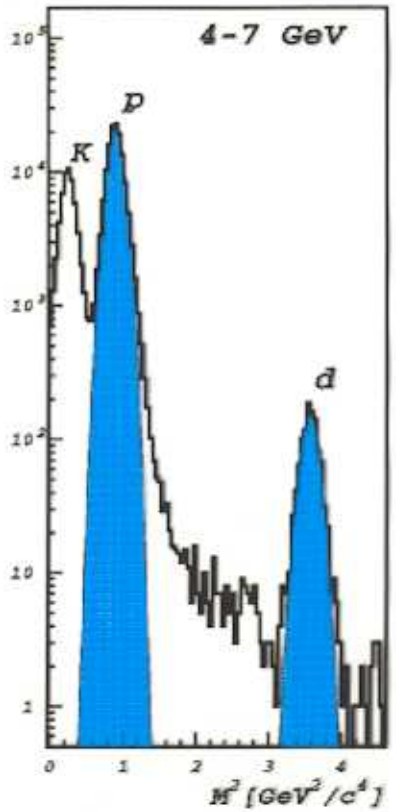
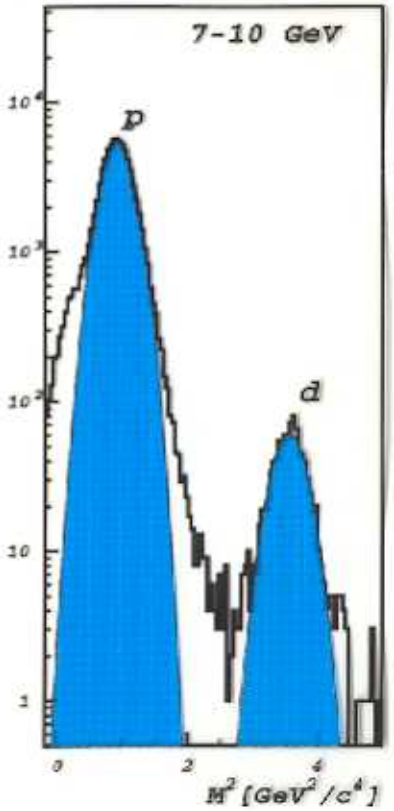
for the NA49 Collaboration

ISMD, Alushta, 7–13 September 2002

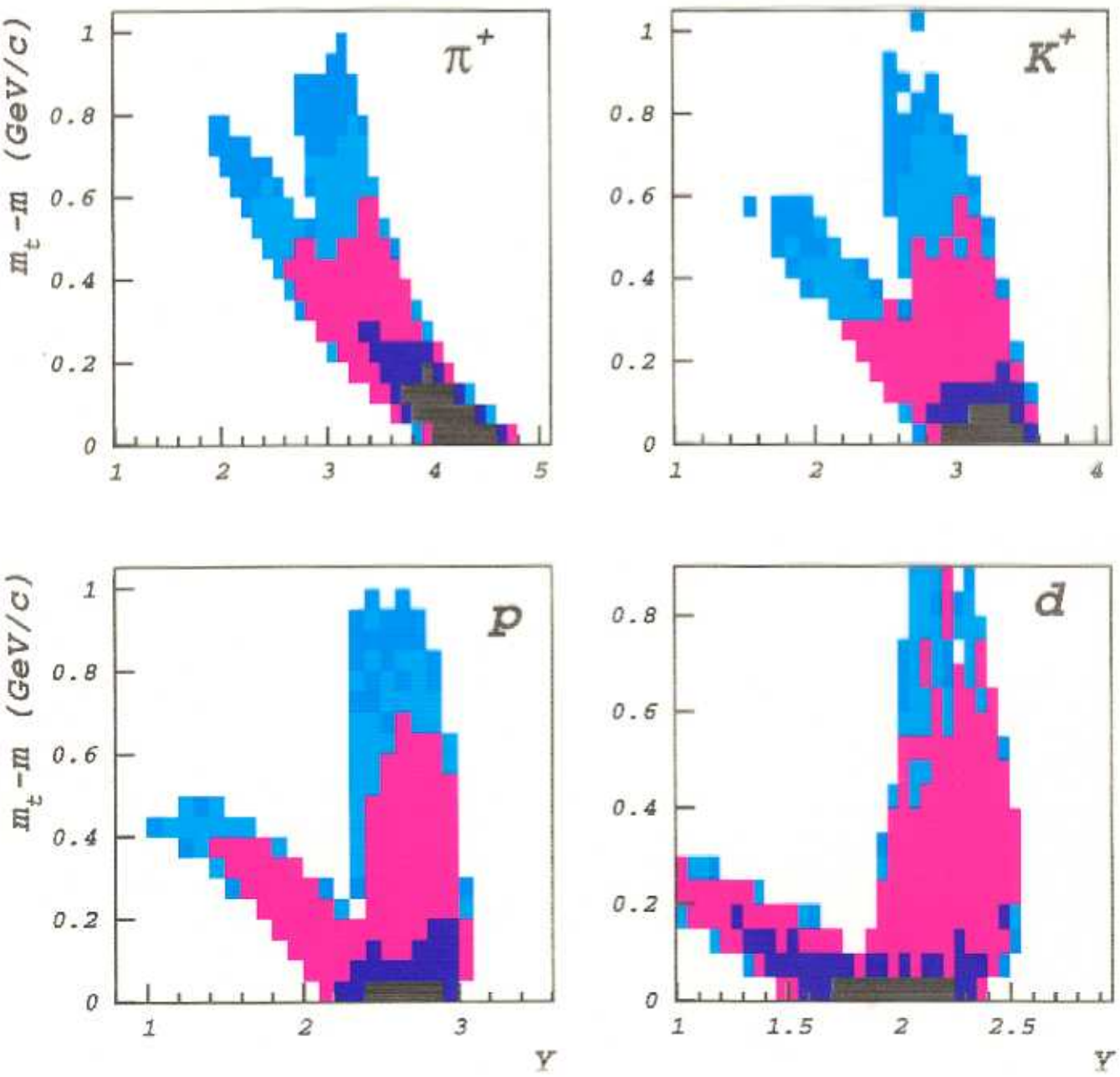
Particle Identification





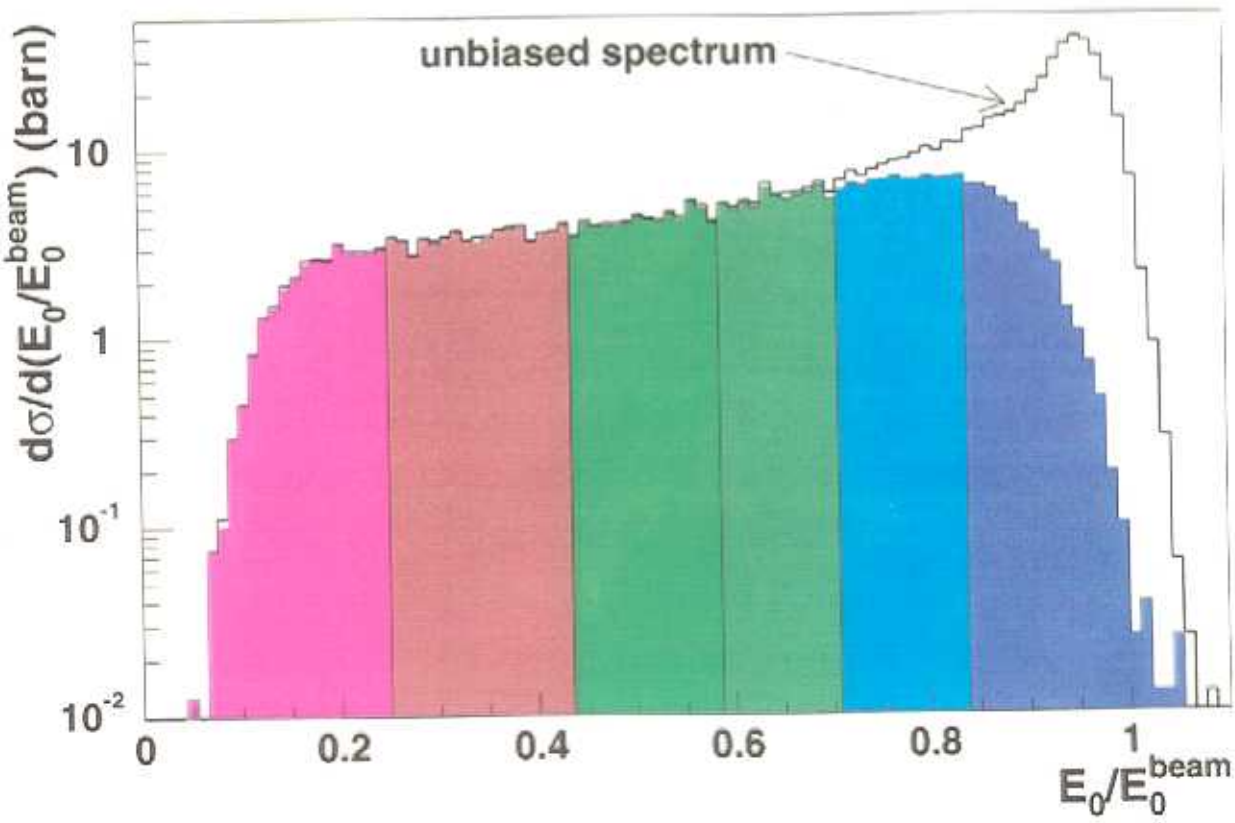


Mt vs Rapidity Acceptance



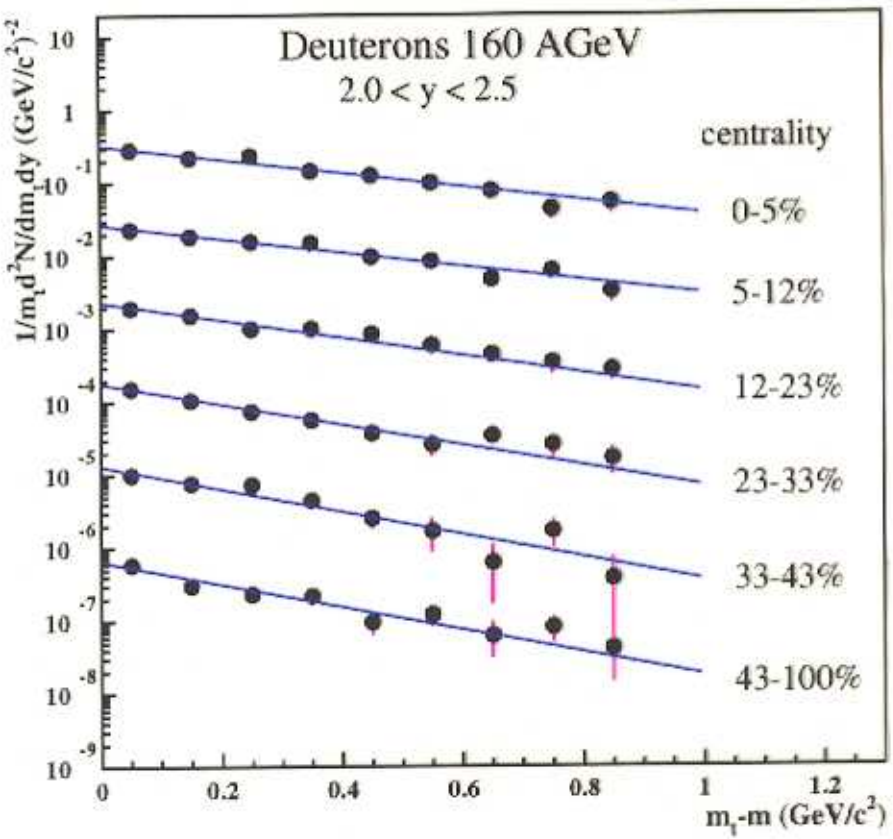
Centrality Determination

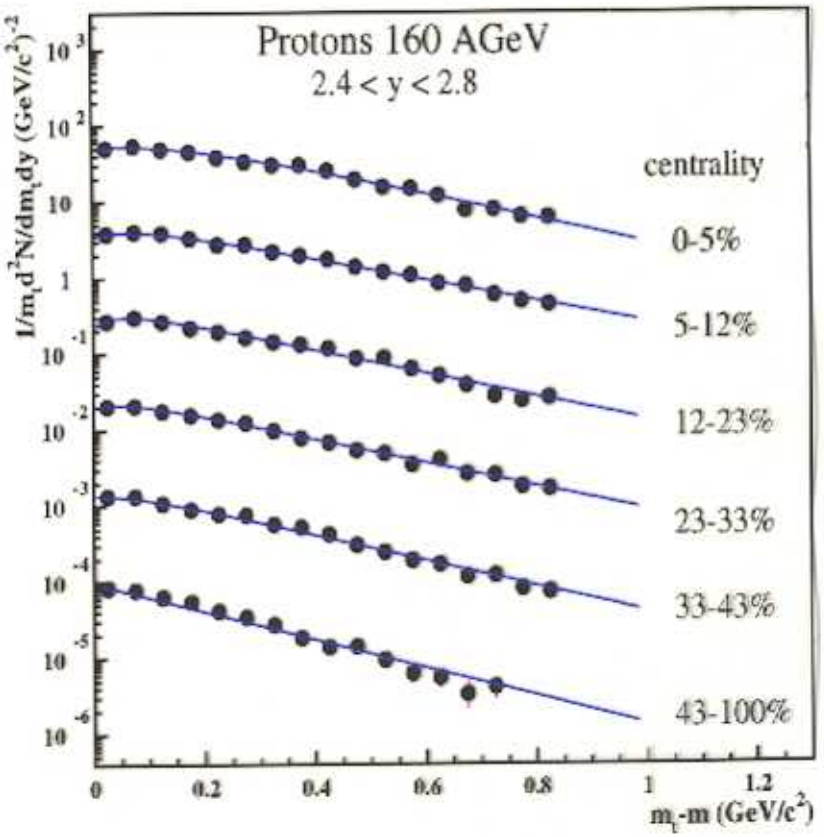
- select events based on 0° energy
- relate to centrality by —
  simulation, calculation, spectra



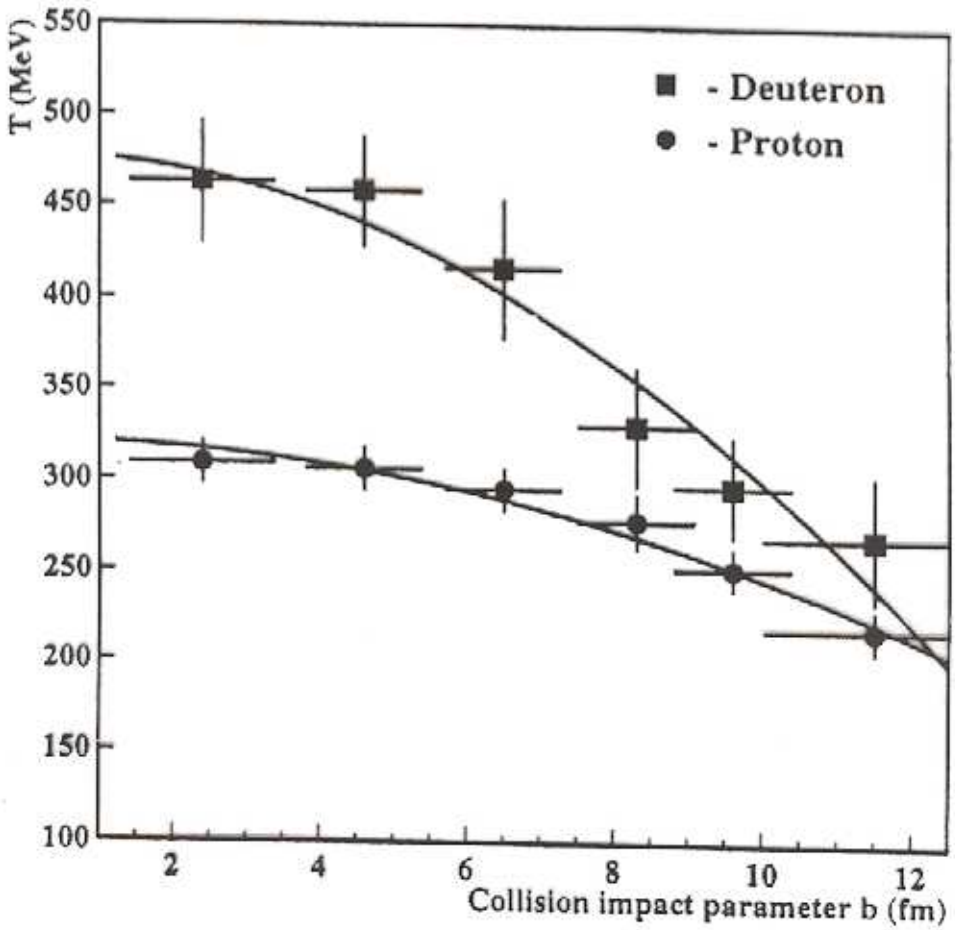
Bin	E_{cal} / E_0^{beam}	Fraction σ_{tot}	N_{part}	b Range (fm)
1	0 - 0.25	0.05	366 ± 8	0-3.4
2	0.25 - 0.40	0.07	309 ± 10	3.4-5.3
3	0.40 - 0.58	0.11	242 ± 10	5.3-7.4
4	0.58 - 0.71	0.10	178 ± 10	7.4-9.1
5	0.71 - 0.80	0.10	132 ± 10	9.1-10.2
6	0.80 -	0.57	85 ± 6	10.2-

Transverse Mass Spectra

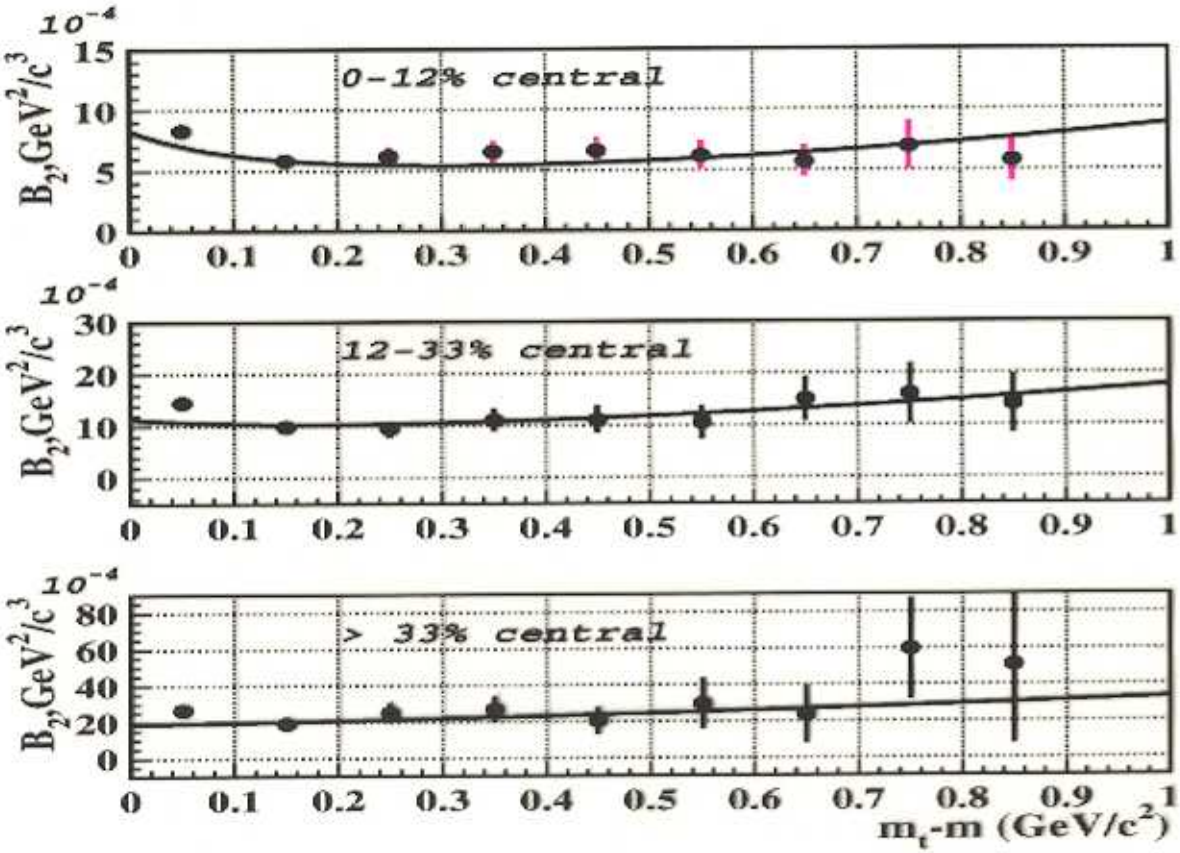




Bin	T_d (MeV)	dn_d/dy	T_p (MeV)	dn_p/dy
1	463 ± 34	0.35 ± 0.03	310 ± 11	30.5 ± 1.0
2	458 ± 31	0.28 ± 0.03	307 ± 11	23.5 ± 0.7
3	416 ± 38	0.21 ± 0.03	281 ± 11	15.7 ± 0.5
4	330 ± 33	0.12 ± 0.02	283 ± 12	11.1 ± 0.4
5	297 ± 28	0.08 ± 0.01	265 ± 12	6.8 ± 0.3
6	269 ± 35	0.04 ± 0.01	226 ± 11	3.5 ± 0.2

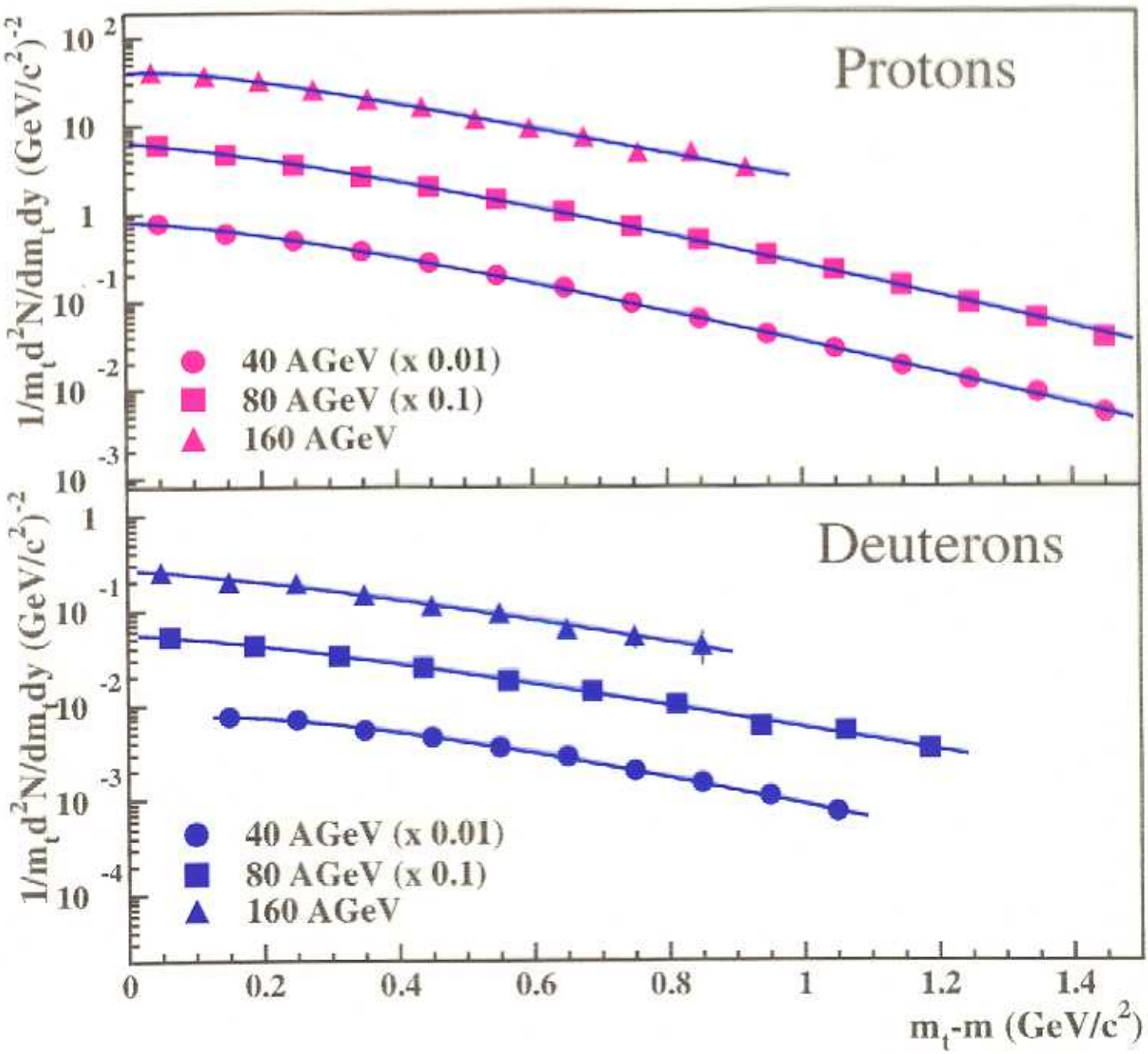

T (MeV)
550
500
450
400
350
300
250
200
150
100
2
4
6
8
10
12
Collision impact parameter b (fm)
- Deuteron
- Proton

B2 vs Transverse Mass

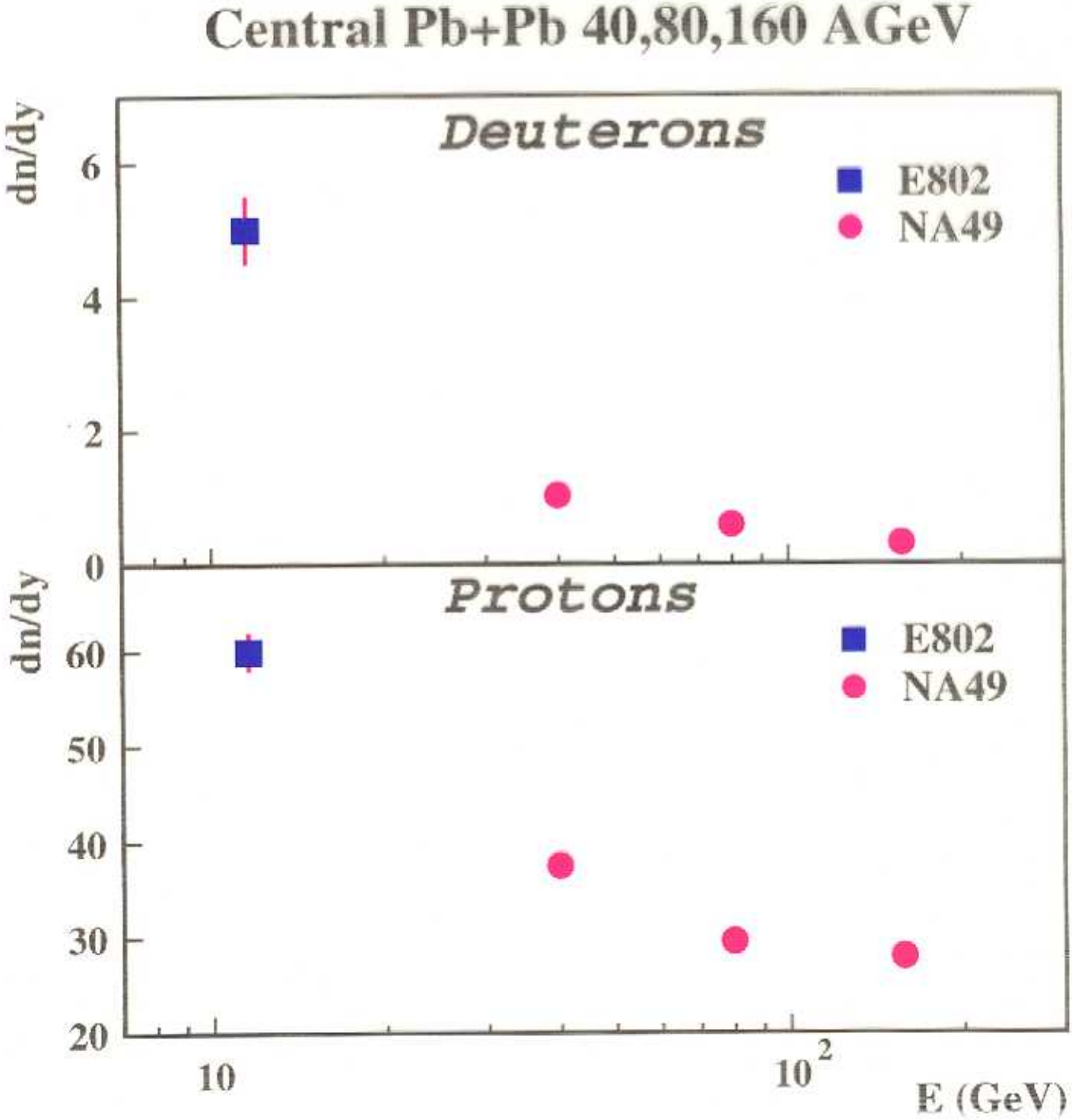


Transverse Mass Spectra

Central Pb+Pb 40,80,160 AGeV



Particle Yields vs Energy



B2 vs Centrality & Energy

Deuteron, 158 AGeV Pb+Pb