

PIONS AT 30 A·GEV

M.G.

- CHANGES AND TESTS SINCE LAST C.M.
- ● NEXT STEPS

● CHANGES AND TESTS SINCE LAST C.M.

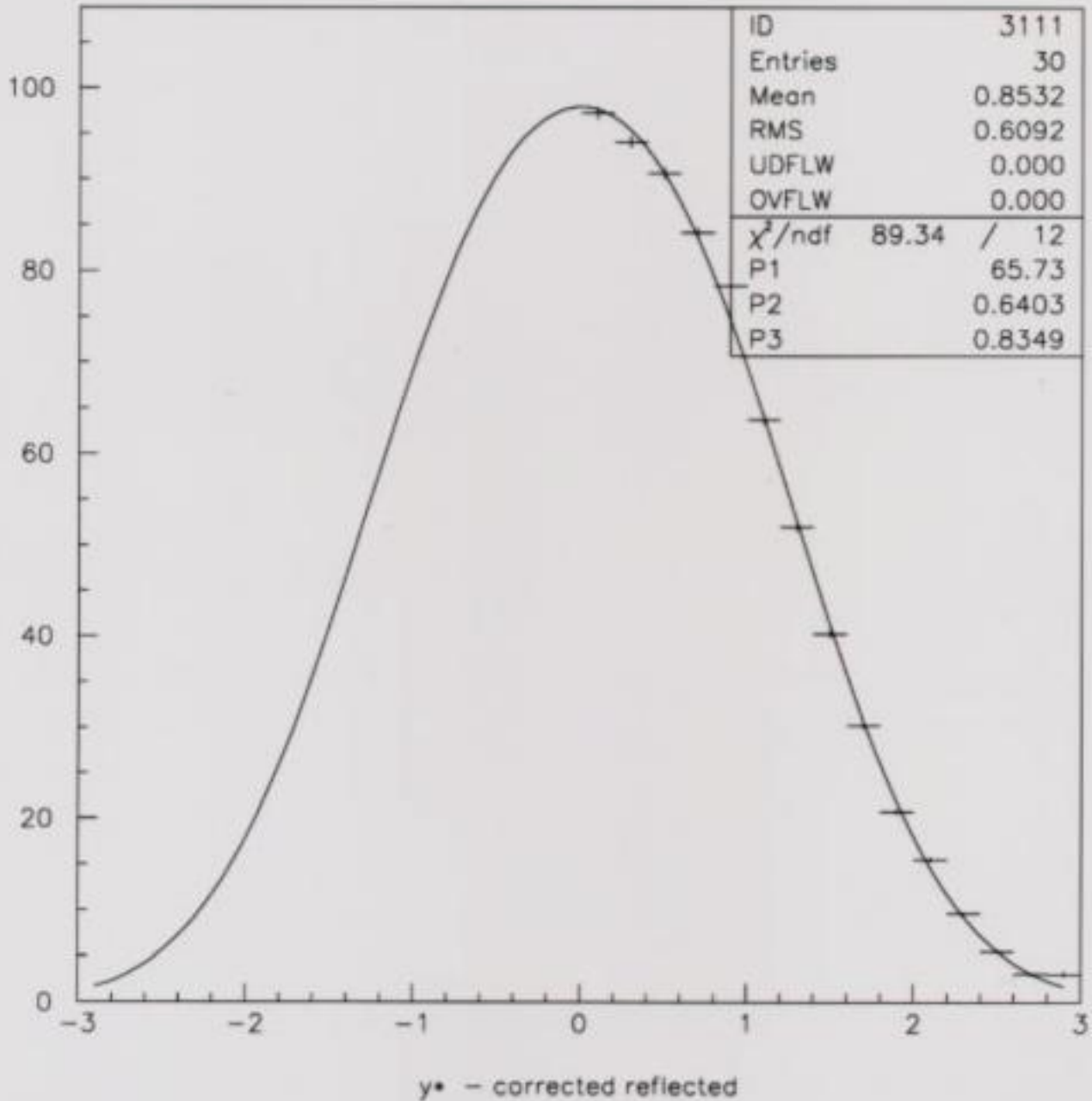
- USE OF FULLY CALIBRATED DATA
(⇒ SQM 2003)

TESTS:

- MODIFIED SCALING FACTOR FOR VENUS BKG (~~10~~ 1%)
- DIFFERENT CALCULATIONS OF GEOM. ACC.
 - TPC-SIM (MAREK)
 - GEANT (ROLAND)
 - CONST. FACTOR (6)
 - ⇒ DIFFERENCES LESS THAN 1%
- MAGNITUDE OF EFF. CORR.: 7%

30 AGEV

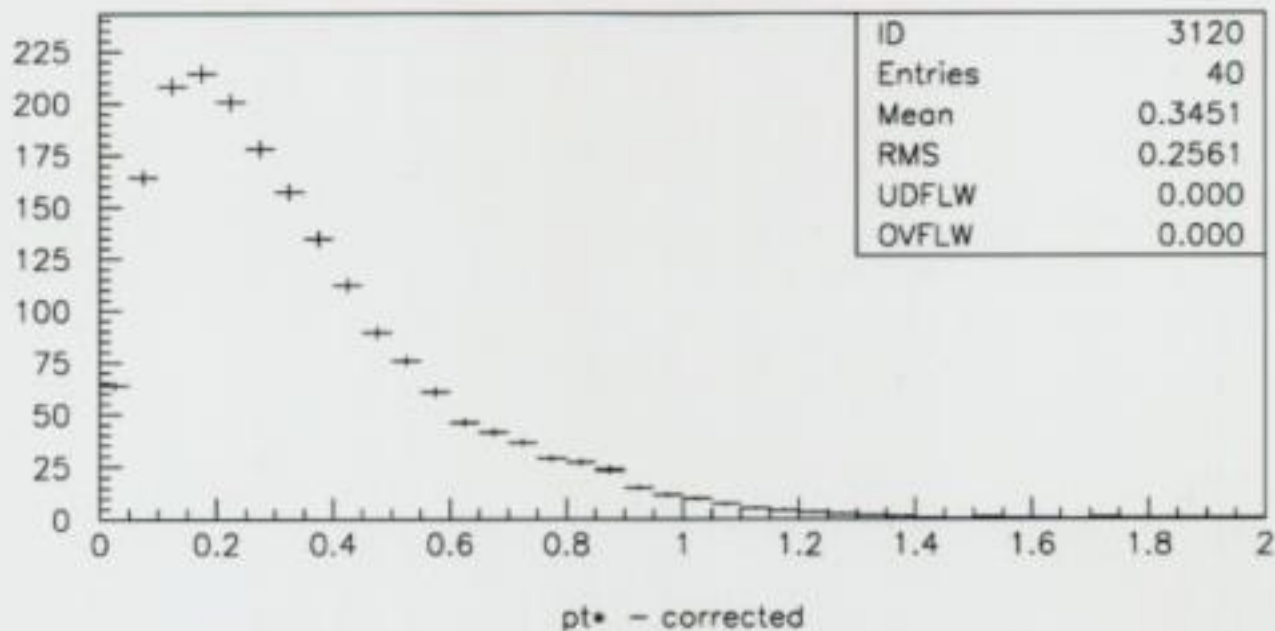
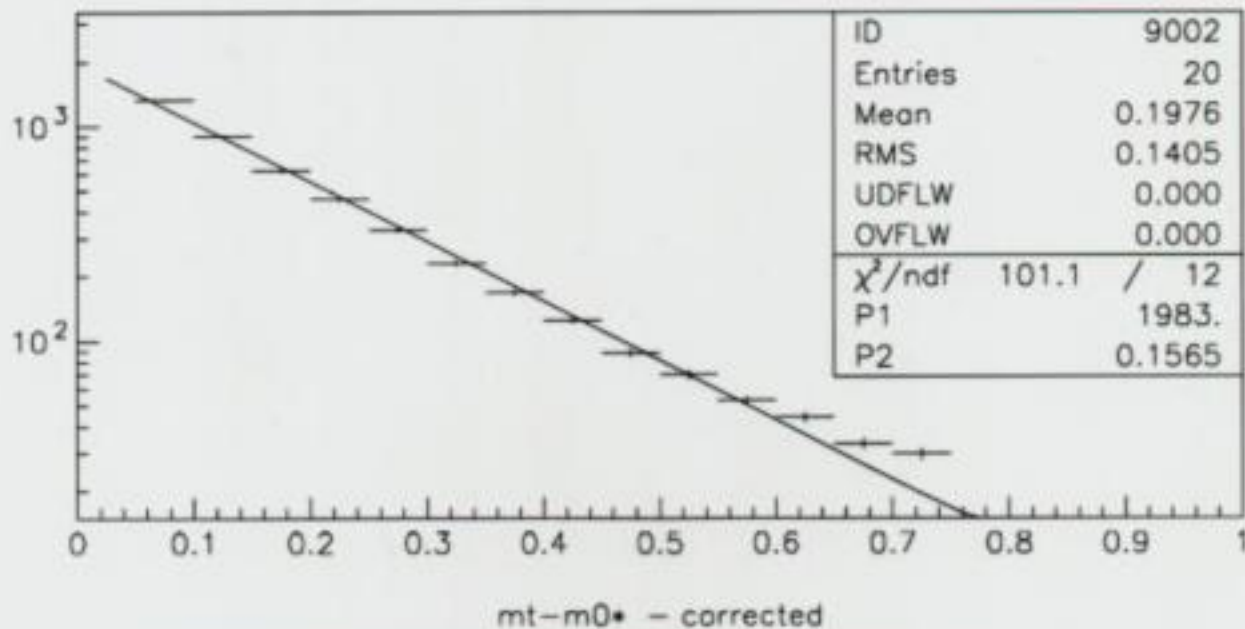
2003/02/18 15.33



30 AGEV

$$0 < \gamma^* < 0.2$$

2003/02/18 15.32



30 A GeV

A comparison of the parameters of the pi- spectra obtained using uncalibrated and final calibrated data.

The same analysis software, with the same cuts as well as correction tables is used in both cases. The results are still very preliminary as final correction tables are still missing. Two different runs were used for uncalibrated and calibrated results.

	uncalibrated data	calibrated data
<pi->	270 +/- 2.7	275 +/- 2.7
y-para:		
C	64.1 +/- 0.5	65.7 +/- 0.5
y0	0.637 +/- 0.007	0.640 +/- 0.006
sigma	0.841 +/- 0.006	0.835 +/- 0.006
mt-para:		
T	165 +/- 3	165 +/- 3

Parameters are defined as in our publication on 40, 80 and 160 A GeV results.

As expected the agreement between results for uncalibrated and calibrated data is good.

~ FIRST
 ~ SQM 2003

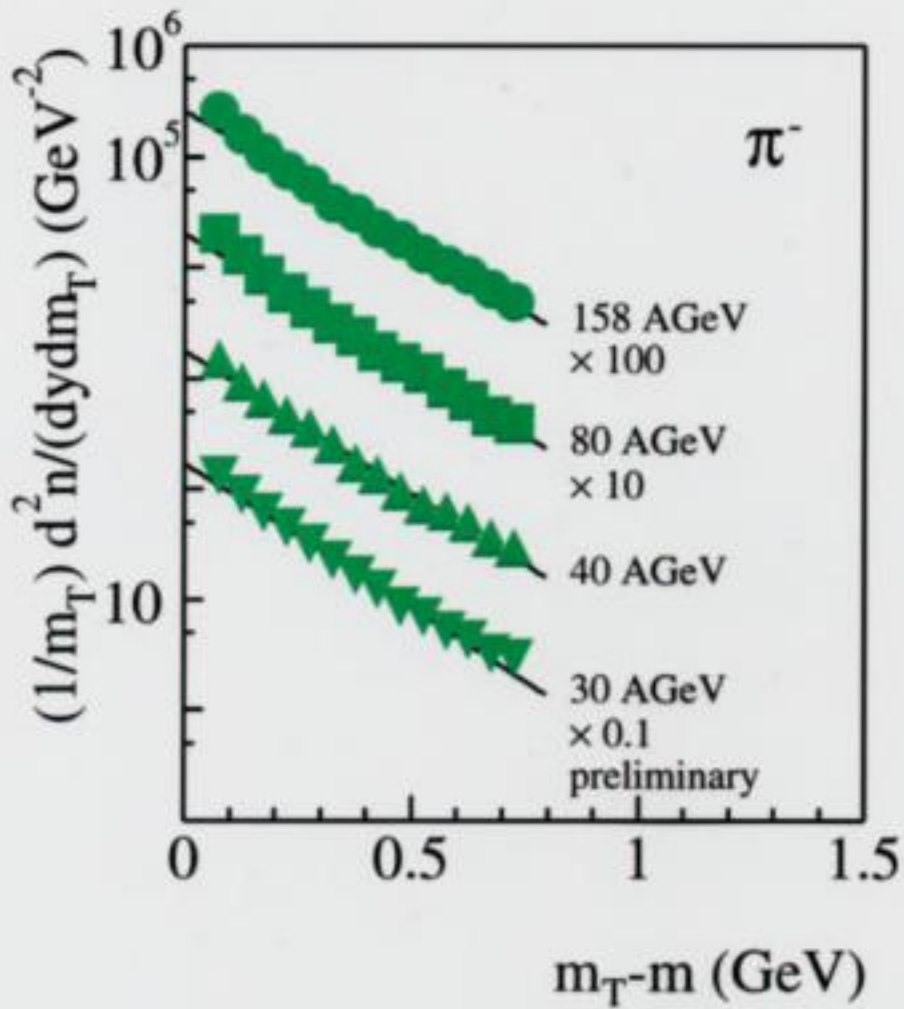
	20 A GEV	30 A GEV	40 A GeV	80 A GeV	158 A GeV
$T(\pi^-)$ (MeV)		$165 \pm 3 \pm 15$ (?) $165 \pm 3 \pm$	$169 \pm 2 \pm 10$	$179 \pm 3 \pm 10$	$180 \pm 3 \pm 10$
$T(K^+)$ (MeV)			$232 \pm 3 \pm 6$	$230 \pm 5 \pm 6$	$232 \pm 4 \pm 6$
$T(K^-)$ (MeV)			$226 \pm 3 \pm 6$	$217 \pm 3 \pm 6$	$226 \pm 9 \pm 6$
$dn/dy(\pi^-)$		92 ± 9	$106.1 \pm 0.4 \pm 6$	$140.4 \pm 0.5 \pm 7$	$175.4 \pm 0.7 \pm 9$
$dn/dy(\pi^+)$		(80 ± 8)	$96.6 \pm 0.4 \pm 6$	$132.0 \pm 0.5 \pm 7$	$170.1 \pm 0.7 \pm 9$
$dn/dy(K^+)$			$20.1 \pm 0.3 \pm 1.0$	$24.6 \pm 0.2 \pm 1.2$	$29.6 \pm 0.3 \pm 1.5$
$dn/dy(K^-)$			$7.58 \pm 0.12 \pm 0.4$	$11.7 \pm 0.10 \pm 0.6$	$16.8 \pm 0.2 \pm 0.8$
$\langle \pi^- \rangle$		$270 \pm 3 \pm 27$ 275 ± 3	$322 \pm 3 \pm 16$	$474 \pm 5 \pm 23$	$639 \pm 17 \pm 31$
$\langle \pi^+ \rangle$		(235 ± 23)	$293 \pm 3 \pm 15$	$446 \pm 5 \pm 22$	$619 \pm 17 \pm 31$
$\langle K^+ \rangle$			$59.1 \pm 1.9 \pm 3$	$76.9 \pm 2 \pm 4$	$103.0 \pm 5 \pm 5$
$\langle K^- \rangle$			$19.2 \pm 0.5 \pm 1.0$	$32.4 \pm 0.6 \pm 1.6$	$51.9 \pm 1.9 \pm 3$

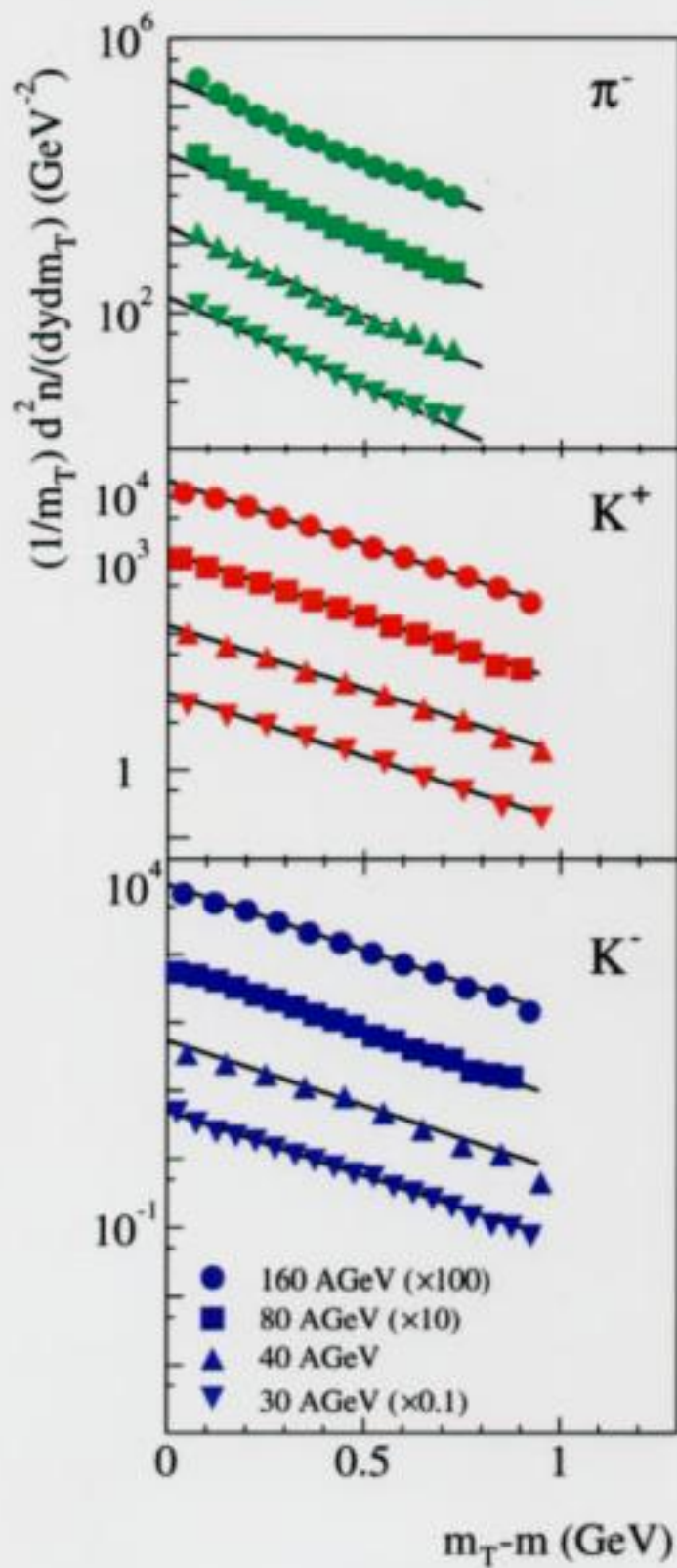
$$\frac{dn}{m_T dm_T dy} = C e^{-m_T/T}$$

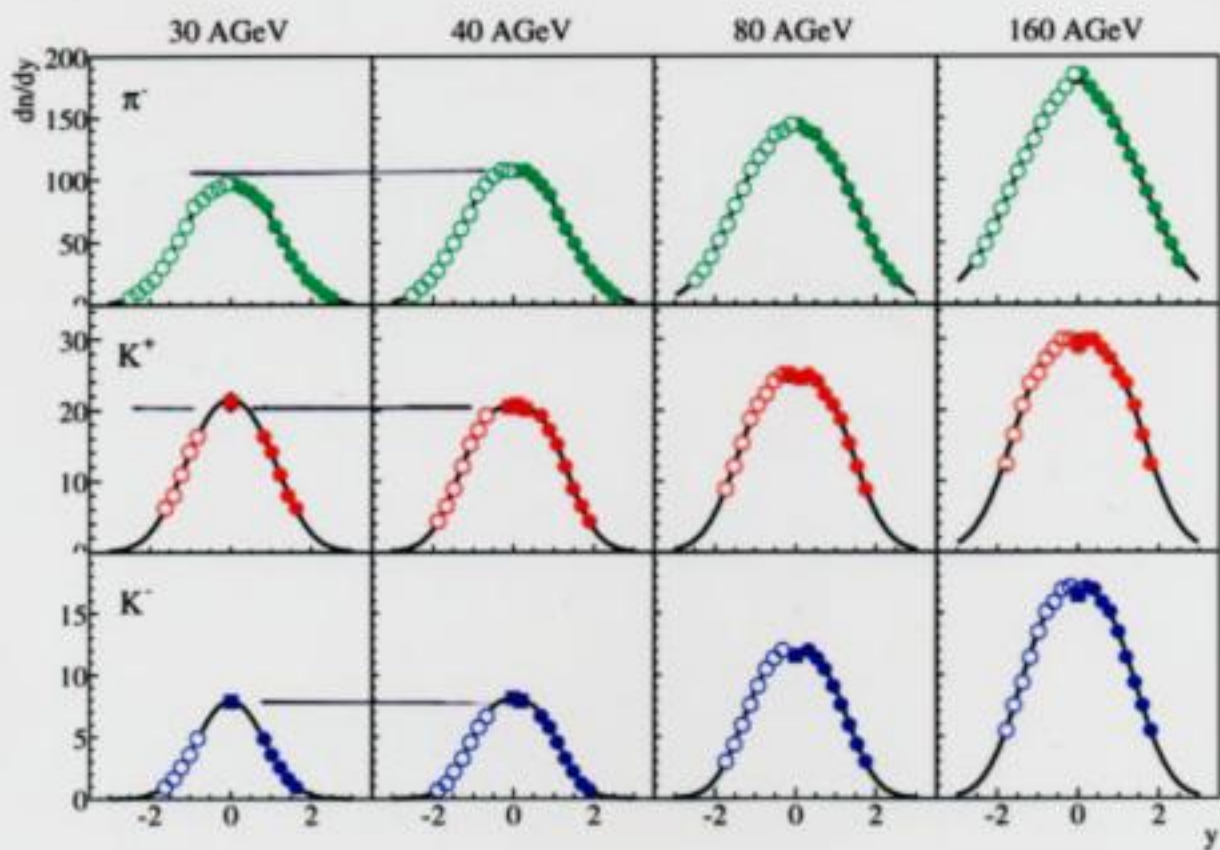
~ FIRST
 ~ SQM 2003

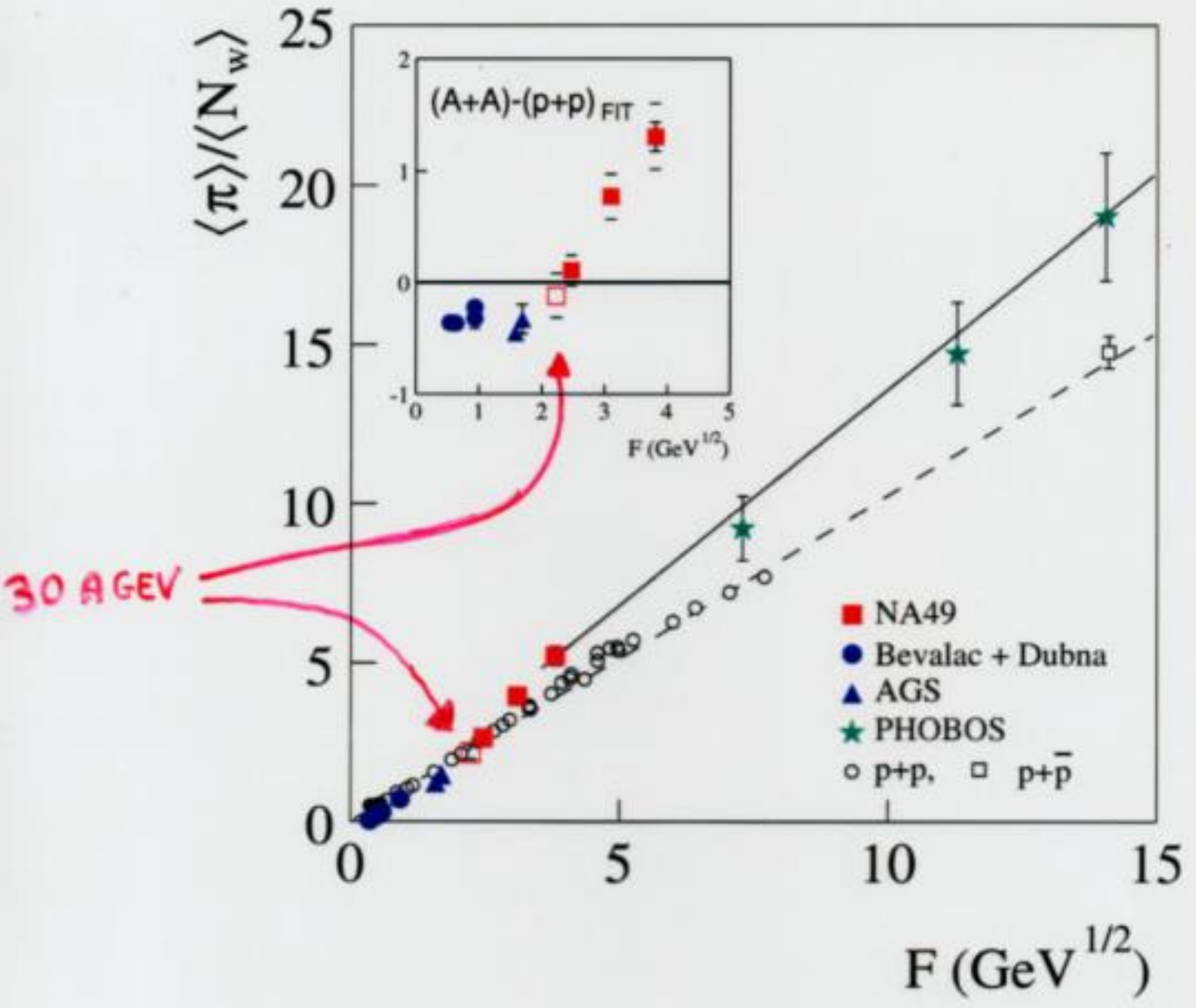
	20 A·GEV	30 A·GEV	40 AGeV	80 AGeV	158 AGeV
$N(\pi^-)$		64.1 ± 0.5	74.0 ± 0.5	97.0 ± 0.7	107.6 ± 1.8
$N(K^+)$		65.7 ± 0.5	16.2 ± 0.4	19.3 ± 0.3	23.4 ± 0.6
$N(K^-)$			6.03 ± 0.13	9.16 ± 0.12	12.8 ± 0.3
$\sigma(\pi^-)$		0.841 ± 0.005	0.872 ± 0.005	0.974 ± 0.007	1.18 ± 0.02
$\sigma(K^+)$		0.835 ± 0.006	0.725 ± 0.016	0.792 ± 0.018	0.88 ± 0.04
$\sigma(K^-)$			0.635 ± 0.011	0.705 ± 0.010	0.81 ± 0.02
$y_0(\pi^-)$		0.636 ± 0.006	0.666 ± 0.006	0.756 ± 0.006	0.72 ± 0.02
$y_0(K^+)$		0.640 ± 0.006	0.694 ± 0.008	0.742 ± 0.008	0.839 ± 0.012
$y_0(K^-)$			0.569 ± 0.010	0.668 ± 0.005	0.727 ± 0.010

$$\frac{dn}{dy} = N \left[e^{-\frac{(y-y_0)^2}{(2\sigma^2)}} + e^{-\frac{(y+y_0)^2}{(2\sigma^2)}} \right]$$









NEXT STEPS

- INDEPENDENT ANALYSIS OF PIONS AT 30 A GEV BY ROLAND BRAMM (PETER S.?)
- VENUS AT 30 A GEV FOR BKG. (Michael) (still technical problems with matching)
- EMBEDDING EFFICIENCY (Roland B.)
- THE SAME ANALYSIS FOR 20 A.GEV

FINAL RESULTS: END OF 2003