

**Brahms Status
for RUN-3 pp.
3/21/2003 RSC meeting**

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BNL

Brahms pp goals

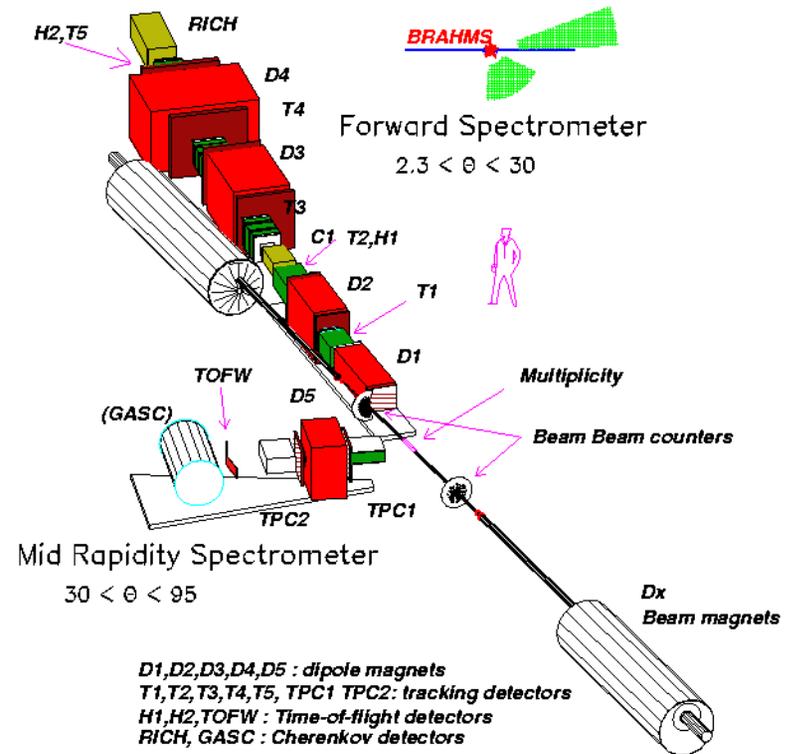
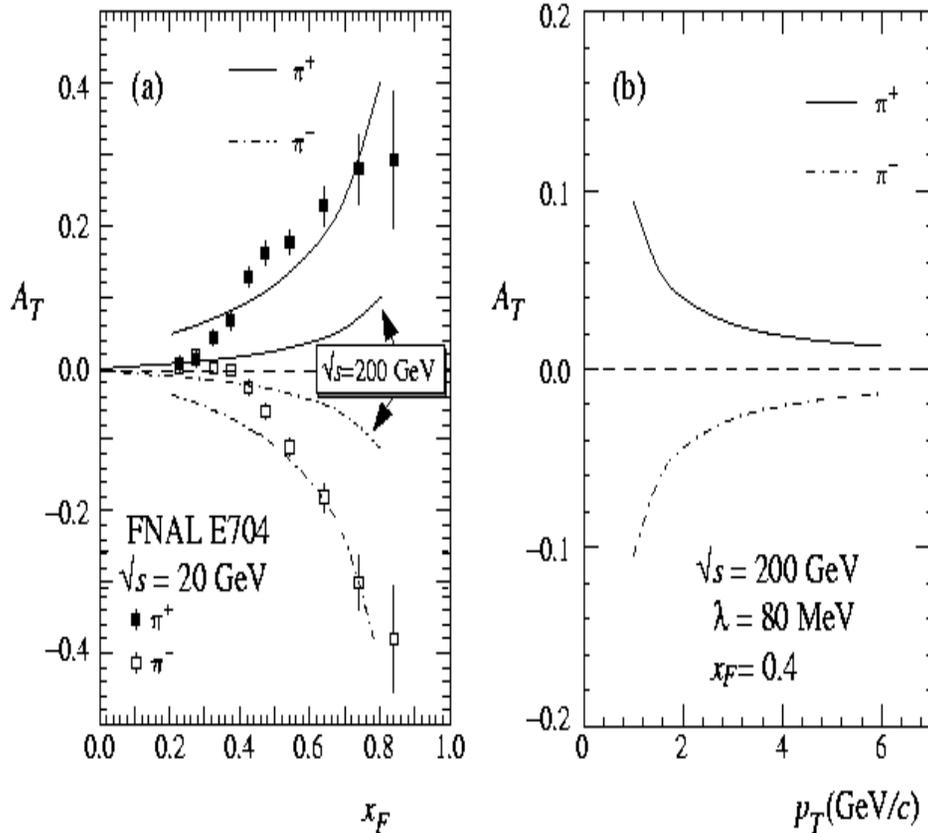
1. Reference data for HI collisions
2. Reference data for dA and gluon saturation description for high p_t (.5-4 GeV/c) at large rapidities (3-3.5).
3. Transverse spin asymmetry at moderately high X_f for charged π .

From Saito's talk at "future transversity measurements 9/18-20,2000

Single Transverse Spin Asymmetry

- Several Models

 **BRAHMS fits best!**



Requirements for spin program

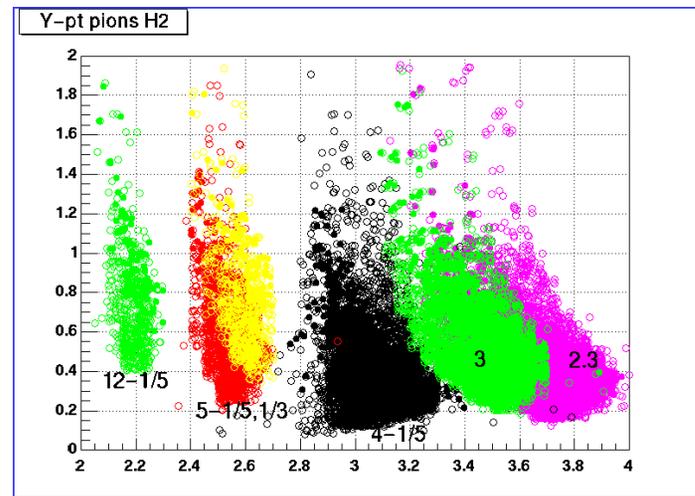
- A pi- measurements will complement the STAR π^0 measurement. Thus π^0 and π^- asymmetries can be mapped for range of xF, pt. not a single shot measurement.
- Due to small acceptance requires high luminosity and good polarization.
- First measurements will be made for moderate Xf (0.2-0.3) [rates] to understand setup and systematic.

Status.

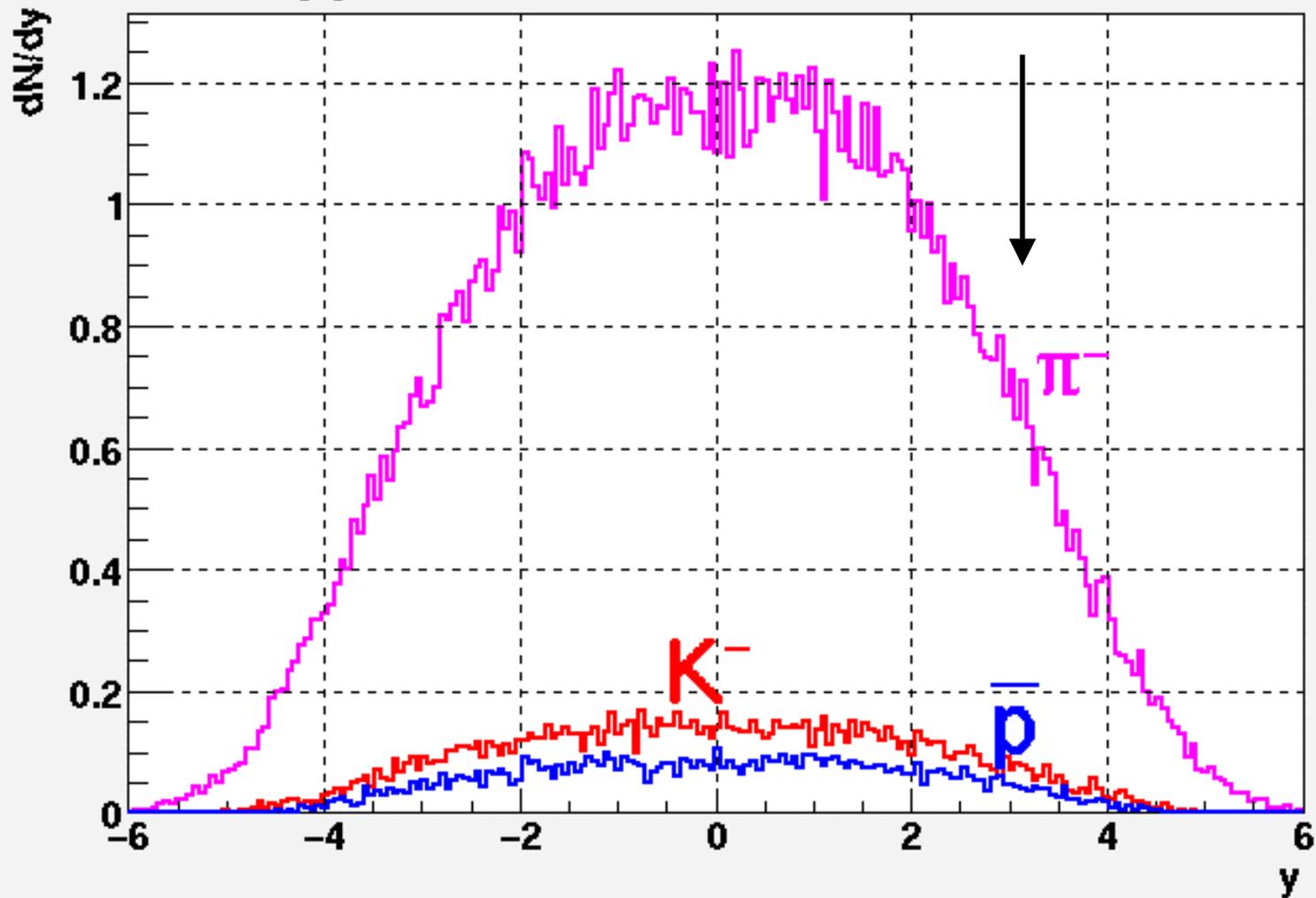
- Run-2
 - The short run did not allow for a complete measurement of reference data. Not complete coverage in angle and momentum.
 - No time was really left for checking the polarization setup/program.

Experimental issues for spin part.

- Solid angle
 - BFS $\sim .6$ msr; P-theta acceptance.
 - At $X_f \sim .25$ $p_t \sim 1$ (3 deg setting).
- DAQ is event driven
 - Effective data-rate is achieved with trigger setup using 3 hodoscopes (Td1,H1,H2) in FS.
 - Trigger system implemented last year, and re-designed for Run-3. System is operational for dA; has high efficiency and $\sim .3$ -.6 tracks/trigger (depending on background & angles.)
 - The Min Bias required for all triggers is generated from the pp2pp INEL stations (2×4). Being used presently for dA.
- PID
 - Present PID separates π/K up to ~ 20 GeV/c
 - To go higher has to change pressure in RICH; For this year will likely interfere with other pp part of pp program.
 - Contamination from p-bar and k-though not too large.



HIJING pp $\sqrt{s}=200$ GeV



Experimental issues

- Background
 - Data taking only useful with collimators in , and no pol measurements in progress.
 - Expect otherwise triggers and DAQ to be in good shape.
- Polarization measurements.
 - Brahms have received two spin scalers (STAR design).
 - Have yet to be implemented with DAQ/Run-control. Likely to be done during setup phase of pp run.

Word on running priorities.

- As mentioned Brahms has 3 goals for this runs.
 - Completion of the low-pt survey using FS involves angle field settings not relevant for measurement of transverse asymmetries (except for seeing none). Estimated to take ~1-2 weeks (50% uptime, ...)
 - The higher pt ($y \sim 2$ and $y \sim 3$) pt spectra..
 - The high rapidity (3&4deg) are settings where data will be useful for both the spin program and the high pt spectra for comparing with dA and AuAu (CGC/gulon saturation picture).
- Run-3 will be a first attempt for the A_{nn} measurements, and should be followed up in subsequent runs.