



Partons and QCD group @ LIP

Meeting with Advisory Committee, LIP, 20 April 2024



Members: Catarina Quintans, Marcin Stolarski, Christophe Pires, Guilherme Almeida, Bárbara Pereira

Former members: Pietro Faccioli, Rita Silva

External Collaborators: Carlos Azevedo, Ema Fadiga, Iara Neves (Univ. Aveiro), Francesco Vagge (Univ. Torino)



AMBER Experiment (NA66)

- Proposal phase-I: [CERN-SPSC-2019-022](#), May 2019
- CERN approval for phase-I: December 2020
- First year of data-taking, for $p\bar{p}$ x-section in p-He, in 2023. Continuing now with p-H and p-D.
- This year's Run started on 10th April



COMPASS Experiment (NA58)

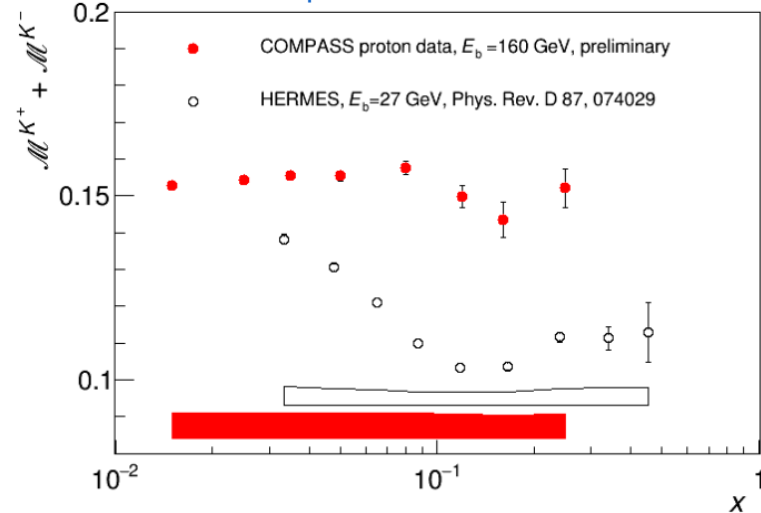
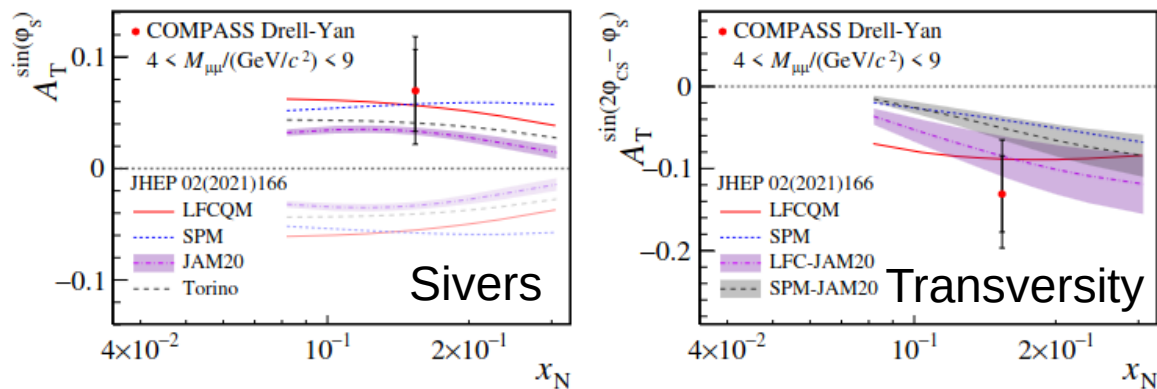
- Last data taking in 2022
- Now in "Data Analysis phase"
- Writing of papers, etc

Inputs to the nucleon TMD PDF extraction

arXiv:2312.17379 (hep-ex)

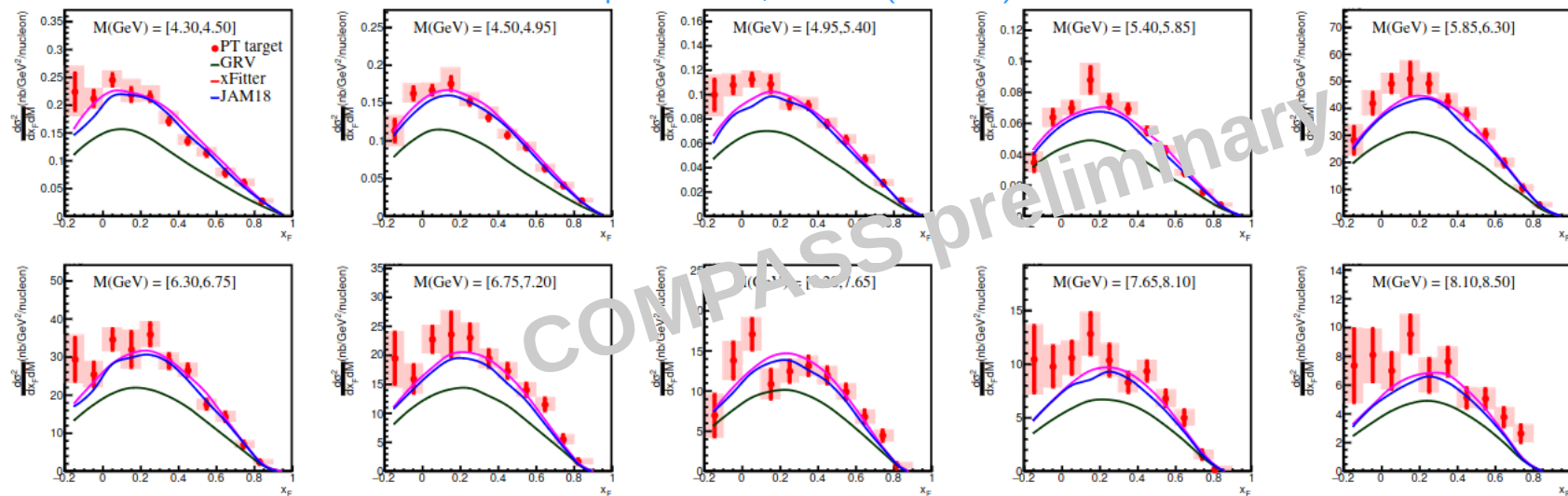
Inputs to FF extraction

Kaon multiplicities, M. Stolarski DIS' 2024



Inputs to the pion (TMD) PDF extraction

Drell-Yan cross section per nucleon, in π^- on $(\text{NH}_3 + \text{He})$





18–20 Mar 2024
Château de Bossey
Europe/Zurich timezone



JOHANNES GUTENBERG
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Overview

Timetable

Committees

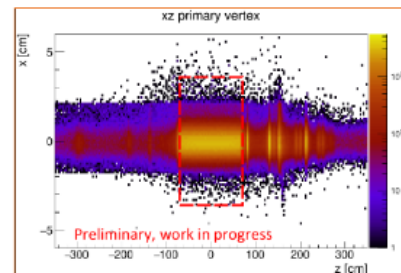
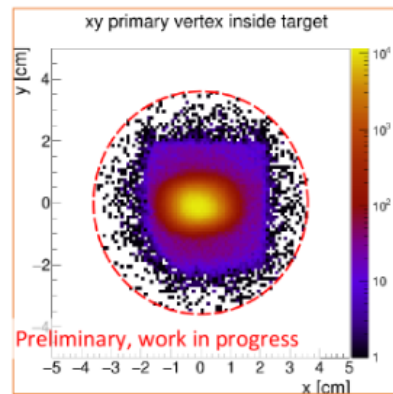
Confirmed Speakers

The PAW-24 is the inaugural International Workshop for a new series of Workshops initiated by the AMBER Collaboration at CERN. The PAW-24 will be held in Geneva, Switzerland at the Chateau de Bossey from March 18th to 20th, 2024.

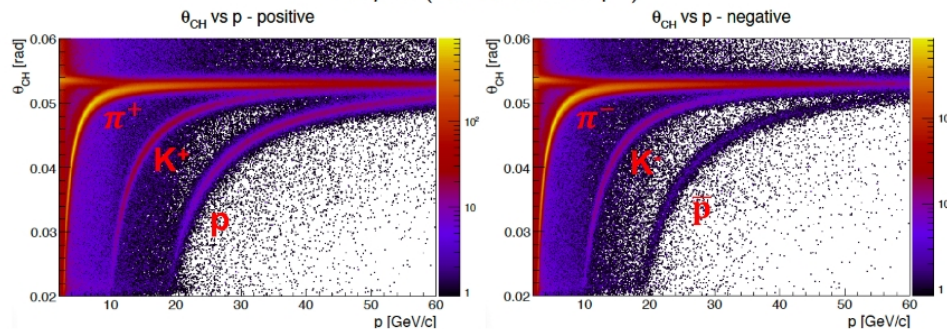
The goal of the PAW International Workshop series is to review the latest progress and future opportunities in forefront research areas of hadron physics related to the AMBER experiment.

Antiproton production cross section measurement (2023/2024)

2023 pHe ($< 1\%$ data sample)



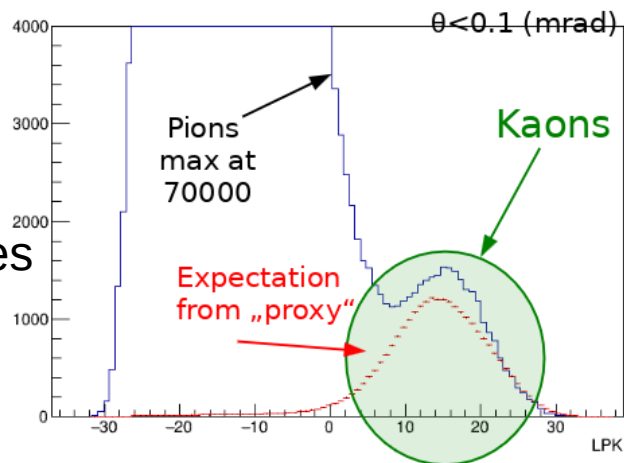
2023 pHe ($< 1\%$ data sample)



Particle identification in the RICH

CEDARs test 2023

Kaons identified at high beam intensities



Apparatus for Meson and Baryon
Experimental Research

Partons and QCD group @ LIP

A long list of tasks/responsibilities:

- Responsible for the Detector Control System
- Coordination of COMPASS Drell-Yan physics group
- Key role in Drell-Yan and DIS physics analyses
- Member at AMBER Publications Committee
- Member of AMBER Technical Board

Synergies:

- 1 masters thesis ongoing (E. Fadiga, Aveiro Univ.)
(in co-supervision)
- Supervision of students (B. Pereira, G. Almeida),
including ERASMUS+ (in cooperation with Turin Univ.)
- Strong cooperation with the Aveiro University/I3N group
(joint funding project to FCT)

MoU of AMBER waiting for portuguese signature

SWOT:

Solid know-how, and a lot of potential in the group



good opportunity to grow

The group is getting smaller. One member of the group lost last year, another member in extremely precarious employment situation



serious threats

FCT project ended on 30/11/2023
New application to FCT "CERN Fund" ongoing
New application to FCT Exploratory projects ongoing