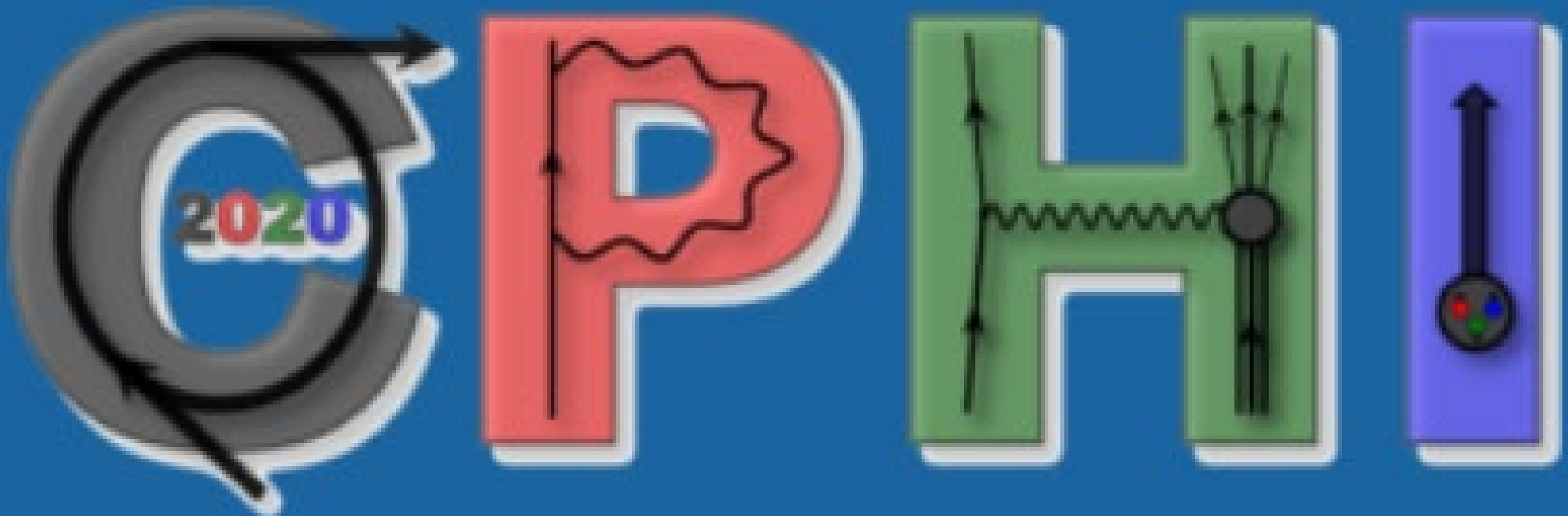


CONCLUDING REMARKS

Franco Bradamante

INFN Trieste

STRONG-2020
Participation with support from STRONG-2020 project



Impressive attendance

- Seniors and new comers

Huge amount of material

- correlations everywhere
- state of the art and perspectives
- many high level contributions
- new and revisited results and ideas ...

it will take time to digest everything !



→ hence no highlights nor summary

only some personal memories from the very first times I interacted with Aram and with Stan



Stan

In the 80's I was carrying on a series of experiments at **LEAR**

the Low Energy Antiproton Ring

D.V. Bugg (Queen Mary), R. Hess (Geneva Univ.), R. Bertini (Sacay/UniTO)...

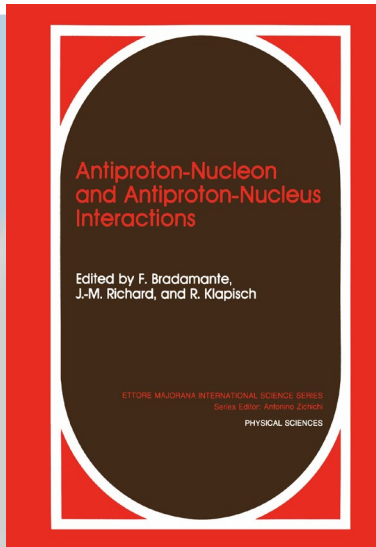
1988: International School of Physics on Low Energy Antiproton Physics in Erice

F.B., J.M. Richard , R. Klapish

Stan was invited and gave a talk on

“Antiproton annihilation in quantum chromodynamics”

proceedings (still on the web): 54 pages



an important issue came up:

the $\bar{p}p$ annihilation range, or the p annihilation radius

on the back of an envelope, Stan found the solution:

analogy with $\mu^+e^- + \mu^-e^+$ scattering

$$\mu^+e^- + \mu^-e^+ \rightarrow \mu^+\mu^- + \gamma's$$

$\mu^+e^- + \mu^-e^+ \rightarrow \gamma's$ have shorter range than

$$\mu^+e^- + \mu^-e^+ \rightarrow \mu^+\mu^- + e^+e^-$$

in the same way $\bar{p}p \rightarrow pions$ is a rearrangement process

Stan

A few years later,
we were measuring SIDIS off transversely polarized deuteron
asymmetries compatible with zero ...

“Evidence for the Absence of Gluon Orbital Angular Momentum in the Nucleon”

Stanley J. Brodsky, Susan Gardner, Phys.Lett. B643 (2006) 22

Transversity 2005



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Transversity 2011

Aram

My personal interest in transverse spin phenomena in hadronic physics

Spectacular spin effects seen at **LEAR**

and also at **E704** (Trieste participation, A. Penzo et al.)

and DIS → **SMC**

HELP Collaboration: **H**adronic **E**lectron **P**roduction at LEP

L. Dick, A. Penzo, B. Vuaridel, Lol: CERN/LEPC **89-10**, LEPC/M88

1992: Archamp workshop , organized by R. Hess, to finalize the proposal
X. Artru, ... A. Kotzinian

HELP Proposal October 1993 - Transversity (no Sivers...)

Rejected

Aram

Try again embedding transverse spin phenomena in a RICHER program
with former SMC Collaborators

First **HMC**, 1995

then **COMPASS**, 1996 in parallel HERMES also benefitted of the work Aram et al.
had done for the HELP Proposal

25 years later we are still here !!!

All this time, Aram has been with us, worked hard,
as we did, and today we can say that together
we did a lot !

Aram

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Thank you, Aram !



And many thanks and congratulation to the organizers

