

# Workshop Report on "TRANSVERSITY 2017"

## THE FIFTH INTERNATIONAL WORKSHOP ON TRANSVERSE POLARIZATION PHENOMENA IN HARD PROCESSES

**Frascati National Laboratories (LNF), Frascati (Italy) 11-15 December, 2017**

Patrizia Rossi (JLab) and Marco Mirazita (LNF-INFN) for the organizing committee



### 1. Introduction

The purpose of this 5-day workshop was to present and discuss in depth the current theoretical and experimental knowledge, together with new theoretical ideas and experimental perspectives in the field of transversity, transverse-momentum dependent distribution and fragmentation functions as well as generalized parton distribution functions. The workshop presented a valuable opportunity to gather the community working in international collaborations at BEPC-II, BNL, CERN, DESY, KEK and Jefferson Lab (JLab), all deeply involved in this area of research. The workshop has been also a unique occasion for young researchers to form a detailed and up-to-date perspective on this fast developing research field, and to present and discuss their own work and projects in a highly stimulating and reactive context.

Transversity 2017 is the fifth in a series of workshops devoted to transversity and transverse-spin effects in high-energy hadronic collisions. It follows those held in 2005 on Lake Como (Italy), 2008 in Ferrara (Italy), 2011 in Lošinj (Croatia) and 2014 in Cagliari (Italy), organized within the framework of an Italian Ministry-funded inter-university Research Project of National Interest (PRIN).

## 2. Organization

The workshop took place at Laboratori Nazionali di Frascati of INFN, Italy from December 11 through December 15, 2017.

The organizing committee consisted of:

Mauro Anselmino	Torino Univ. & INFN
Alessandro Bacchetta	Pavia Univ. & INFN
Marco Contalbrigo	INFN-Ferrara
Umberto D'Alesio	Cagliari Univ. & INFN
Enzo De Sanctis	INFN-LNF
Anna Martin Trieste	Univ. & INFN
Marco Mirazita	INFN-LNF (co-chair)
Emanuele Pace	Rome Tor Vergata & INFN
Patrizia Rossi	Jefferson Lab & INFN-LNF (co-chair)
Giovanni Salmè	INFN-Rome

The workshop also had a special session on Thursday afternoon, December 14<sup>th</sup> to honor Prof. Mauro Anselmino's career, following his recent retirement. Prof. Anselmino gave important contributions to our field during his long career. Indeed, "Transversity" was born also thanks to him.

More details on the workshop can be found under:

<http://www.roma1.infn.it/conference/Transversity2017/index.html>

## 3. Budget

The workshop was supported by:

Jefferson Lab: \$3.000,00

INFN: Euro 3.000,00

EPJA: Euro1.500,00

Argonne National Lab: \$1.500,00

University of Connecticut: \$3.000,00

CAEN: Euro 300,00.

JSA awarded \$3.000,00 that was used for waiving the fees (250Euro) of students/young scientists and prominent physicists formally retired (thus without their own budget) but still very active in the field. Here is the list of people for which JSA money was used to pay the fee:

	FEE
BELGHOBSI, Zouina	250
DE SANCTIS, Enzo	250
FREDERICO, Tobias	250
KERBIZI,Albi	250
KOTZINIAN, Aram	250
LEADER, Elliot	250
PISANO, Cristian	250
SZABELSKI, Adam	250

**TOTAL = 2000 Euro**

#### **4. Workshop Summary**

The workshop consisted of 55 invited talks and a round table on Wednesday afternoon, which was dedicated to discussions about our actual knowledge of the proton structure, open problems and suggestions for future developments and investments in the field, both theoretical and experimental.

89 participants from 16 countries attended the workshop. A detailed list of the talks and participants can be found on the workshop web page (<https://agenda.infn.it/conferenceOtherViews.py?showSession=all&showDate=all&view=standard&fr=no&confId=12263>). The workshop brought together experts in theory, phenomenology and experiments of TMDs and GPDs as well as in lattice QCD. A session was dedicated to discuss how to extract the 3-dimensional image of the nucleon from cross sections, asymmetries and multiplicities measurements. Also the impact of present and future experiments (particularly the ones of the JLab 12 GeV upgrade and the possible future EIC), on LHC experiments/results was assessed.

The workshop began on Monday morning and finished on Friday at 1.30 pm. It was very successful as witnessed by the enthusiastic involvement of the participants and the vivid discussions.

The full program as well as the list of participants can be found on the web page: <http://www.roma1.infn.it/conference/Transversity2017/index.html>