
FINAL CIRCULAR FOR

APCTP Focus Program in Nuclear Physics 2022

“Hadron Physics Opportunities with JLab Energy and Luminosity Upgrade”

Venue: APCTP Headquarters at POSTECH Campus, Pohang, Korea
(<https://www.apctp.org>)

Period: July 18 (Mon), 2022 - July 23 (Sat), 2022

Workshop homepage: (<https://indico.knu.ac.kr/event/566/>)



Overview & Topics

The electroproduction of mesons and photons has been shown to be a powerful tool for studies of the interaction of elementary particles and their dynamics at short and long distances. In particular, studies of the orbital motion of partons encoded in transverse space and momentum distributions of partons, like Generalized Parton Distributions (GPDs) and Transverse Momentum Distributions (TMDs), have been widely recognized as key objectives of the JLab 12 GeV program. Studies of azimuthal distributions of hadrons and photons in exclusive and semi-inclusive DIS (SIDIS) provide access to variety of observables widely recognized as key objectives of the COMPASS measurements, various activities at RHIC and KEK, the LHC fixed target projects (LHC spin, SMOG2@LHCb) and a driving force behind the construction of the future Electron Ion Collider (EIC). Studies of the ground and excited nucleon state structure in terms of nucleon elastic form factors, PDFs, and the nucleon to nucleon resonances transition electro-excitation amplitudes offer a unique complementary opportunity to explore the evolution of active components in the structure of the ground and excited state nucleons at distances where the transition from quark-gluon confinement to the perturbative QCD regime is expected and where the dominant part of hadron mass emerges. These studies are of particular importance to address key open problems of the Standard Model on emergence of hadron mass and quark-gluon confinement. The upgraded to 24 GeV JLab, with much wider kinematical coverage, in particular at large Q^2 , will be crucial to extend all ongoing projects at JLab, in particular studies of the 3D structure of hadrons and hadronization, pin down interaction dependent parts, providing missing deeper access to quark-gluon dynamics and opening new

opportunities on studies of the charm sector and significant improvement in secondary beam capabilities.

Invited Speakers

H. Avagyan (JLab)
V. Burkert (JLab)
P. Di Nezza (INFN, Frascati)*
C. Dilks (Duke U.)
T. Frederico (ITA, São Paulo)
H. Hakobyan (U. Santa Maria)
T. Hayward (U. Connecticut)
A. Ilyichev (INP, BSU)
M. Jarvinen (APCTP)
C. R. Ji (North Carolina State U.)
K. Joo (U. Connecticut)
A. Kerbizi (INFN, Trieste)
A. Kim (U. Connecticut)
A. Kotzinian (INFN, Torino)
Z.-E. Meziani (Argonne)
V. Mokeev (JLab)
B. Parsamyan (CERN)
J. Roche (Ohio U.)
N. Sato (JLab)
K. Semenov-Tyan-Shanskiy (KNU)
D. Sivers (Portland U.)
M. Sargsian (Florida Int. U.)
A. Vladimirov (U. Regensburg)*

Organizers

Yongseok Oh (Kyungpook National Univ./APCTP)
Kyungseon Joo (Univ. of Connecticut)
Harut Avagyan (Jefferson Lab.)
Chueng-Ryong Ji (North Carolina State Univ.)
Viktor Mokeev (Jefferson Lab.)
A. Vladimirov (U. Regensburg)

Contact

Should you have any questions, please contact

Yongseok Oh (yongseok.oh@apctp.org) Cell-Phone: 010-6530-2951

Note: You may need this phone number when you pass the quarantine booth of ICN airport.

Accommodation

During the workshop, you will stay at POSCO International Center (PIC) which is located very close to APCTP. This is an on-campus accommodation facility of POSTECH (Pohang University of Science and Technology). We reserved rooms that will be assigned to registered participants. All reservations can be made through APCTP and there will be no direct confirmation email from PIC to participants. When you arrive at Pohang, please come to PIC as explained in Travel Information for checking-in. The address of PIC is as follows.

POSCO International Center
77, Cheongam-ro, Nam-gu, Pohang-si, Gyeongsangbuk-do, 37673, KOREA
Phone: 054-279-8500

Hosted and Sponsored by

Asia Pacific Center for Theoretical Physics
Center for High Energy Physics, Kyungpook National University

Visa

Visa-waived visitors should apply for K-ETA through internet. Please visit the webpage of [K-ETA](#). The cost is KRW 10,000 (about USD 8). Please beware of the private websites imitating official K-ETA website. You should visit <https://www.k-eta.go.kr/portal/apply/index.do?locale=EN>.

If your country is not listed as a K-ETA eligible country, you need a visa. In this case, please contact the LOC.

COVID-19

Quarantine

Since June 8, 2022, the quarantine is no longer required for any international travelers regardless of the vaccination history. However, the requirement of the negative PCR test result before boarding is still in effect.

PCR tests

1. Before departure:

The Korean government requires each international visitor to have the negative result of a PCR test performed within 48 hours before boarding to Korea. (This means that if your

flight is at 7 PM, July 5, the test should be done any time of July 3 or July 4.) The Rapid Antigen Test (RAT) performed by a medical expert within 24 hours before departure is also acceptable. But the certificate issued by a specialty is required. In the US, please contact nearby drug stores. For example, Walgreens Rapid NAAT test is acceptable in Korea and you get the results within 2 hours. Please upload this pre-flight PCR test result to the Q-code with your vaccine history (<https://cov19ent.kdca.go.kr/cpassportal/biz/beffatstmnt/main.do?lang=en>).

2. After arrival:

There will be a PCR test **within 3 days** after the entry (at your own cost: 60-70 USD). You can have the test on your arrival at the ICN airport by reservation or walk-in (fee: KRW 80,000, see https://www.airport.kr/ap_cnt/en/svc/covid19/medical/medical.do) or after you arrive at Jeju. We will have the test together during Monday afternoon. To report the result to the local government, you may need to provide the following contact information when you pass the ICN airport: Yongseok Oh (yohknu@gmail.com) Cell-Phone: 010-6530-2951

3. At the 6th or 7th day after entry, all visitors are encouraged, but **not required**, to have a self RAT.

Face mask

Effective from May 2, 2022, wearing a face mask outdoors is not required but is highly recommended. It is required, however, to wear a mask indoors, in public transportations, or in a crowded area.

When you return to your home country

1. The US government does NOT require the negative result of a PCR or antigen test before boarding to the US. This is in effect on 12th of June, 2022. (<https://www.cdc.gov/quarantine/fr-proof-negative-test.html>).

2. Most EU countries do not require PCR test results for fully vaccinated passengers who are boarding to EU.

3. The Japanese government requires the negative result of PCR test performed within 72 hours before boarding to Japan.

Please check with <https://apply.joinsherpa.com/travel-restrictions> for more information.

Travel Information

APCTP website: <https://www.apctp.org/contents/index.php?idcid=111&mcode=111>

Transportation from Seoul/Incheon airport to Pohang

The Pohang city is situated in the south-east part of Korea and is accessible by the Incheon/Seoul (ICN) international airport during the pandemic. The best way come to Pohang from ICN is to use an express train (KTX). The most common and convenient way to come to Pohang from ICN airport is to use express train. The airport train line operates between ICN and Seoul train station. At Seoul train station, you can take express train (KTX) to Pohang. The fare is about KRW 5,000 from ICN to Seoul Station and KRW 53,600 (2nd class) or KRW 75,000 (1st class) for KTX from Seoul Station to Pohang Station. It takes about 2 hr 25 min and there are 16 one-way trips per day. The time table is given below. The LOC will be happy to assist you to buy tickets from Pohang to Seoul. Please ask at the registration desk for help.



KTX Time Table			
Train No.	Departing		Arriving
	Seoul		Pohang
297	5:05		7:22
231	5:40		8:07
233	6:45		9:08
235	8:10		10:39
4031	8:10		10:39
291	9:25		11:48
4035	9:25		11:48
239	10:45		13:12
243	12:41		14:57
241	13:00		15:33
245	14:35		17:03
293	15:11		17:34
247	16:20		18:43
249	17:35		20:03
251	20:40		23:07
253	22:20		0:43

	Pohang	Seoul
232	5:37	7:59
234	7:15	9:50
236	9:59	12:23
238	10:15	12:46
298	10:41	13:09
240	11:04	13:34
292	12:37	15:03
4034	12:37	15:03
244	14:04	16:39
246	15:37	17:55
248	16:23	18:57
4036	17:30	20:01
250	18:00	20:31
294	18:56	21:30
252	19:21	21:57
254	21:36	0:04

Transportation from Jeju to Pohang

If you attend the APCTP Workshop at Jeju, you may fly from Jeju (CJU) to Pohang airport (KPO). There are 2 flights from CJU to KPO (at 11:05 AM and at 5:50 PM by Jin Air) every day. Reservation of these flights from July will be open early June according to Jin Air. For reservation, please visit [Jin Air](#). Please contact the LOC if you need any help.

Transportation from Pohang KTX Station or KPO airport to POSCO IC

We recommend you to take a taxi to POSCO International Center. From KTX Station the fare would be around KRW 10,000 - 12,000. Please show the following text to the driver.

1 USD is approximately KRW 1,250.

포항공대 국제관으로 가주십시오.