FINAL CIRCULAR FOR

APCTP Workshop on Nuclear Physics 2022

"Physics of Excited Hadrons in the Present and Future Facilities"

Venue: Jeju Suites Hotel (http://www.suites.co.kr/Jeju/eng/indexE)
Period: July 11 (Mon), 2022 - July 16 (Sat), 2022
Workshop homepage: (https://indico.knu.ac.kr/event/567/)

Overview & Topics

The study of electromagnetic transitions opens a window into the very nature of the strong interaction. And, indeed, such a study of how a ground-state nucleon transitions to an excited state, over a broad range of q^2, will provide keen insight into the evolution of how dynamically generated masses emerge from the asymptotically-free, nearly massless quarks of perturbative QCD as well as provide information on the ancillary effects from the meson-baryon cloud. The discussions will include electro- and photo-production measurements (for example, at ELSA, JLab, LEPS, and MAMI), as well as meson-beam data (for example, at GSI, FAIR, and J-PARC), which amply complement the requisite information for baryon spectroscopy. Research topics to be performed in future facilities will also be discussed. Finally, studies of in-medium vector meson spectral function modifications, which are related to the electromagnetic transitions will be addressed as well. A variety of theoretical developments in this field will be discussed in depth. The motivation of this workshop is to share and exchange ideas and research plans for excited hadron among theorists and experimentalists.

Invited Speakers

Speaker	Title
P. Achenbach (U. Mainz)	Physics Highlights and Perspectives with Electron Beams in Mainz
S.-I. Ando (Sunmoon U.)	The S matrices of elastic alpha-carbon-12 scattering at low energies in effective field theory
A. J. Arifi (APCTP)	Recent progress on radial excitation of hadron
K.-T. Brinkmann (U. Giessen)	Physics with PANDA at FAIR
V. Burkert (JLab)	Towards mechanical properties of the proton
A. Camsonne (JLab)	High luminosity experiments in Hall A at Jefferson Laboratory
H.-M. Choi (Kyungpook Nat. U.)	Chiral anomaly and the pion properties in the light-front quark model
P. Cole (Lamar U.)	Exploring the production of N*s with pion and electron beams
M. Doering (George Washington U.)	Combined Analysis of Photo- and Electroproduction Reactions with the Julich-Bonn-Washington Model
T. Hayward (U. Connecticut)	Accessing Target Fragmentation: Prospects and Results from CLAS12
A. Hosaka (Osaka U.)	Tetraquark bound and resonant states
T. Ishikawa (Tohoku U.)	Interaction between the eta meson and nucleus studied in coherent neutral-pion and eta-meson photoproduction on the deuteron
C.-R. Ji (North Carolina State U.)	Light-Front Quark Model Analysis of Radially Excited Pseudo-scalar and Vector Mesons
K. Joo (U. Connecticut)	Transition GPDs off Proton with CLAS12
A. Kim (U. Connecticut)	Polarized Structure Function $\sigma LT'$ from $\pi 0 p$ Electroproduction Data in the Resonance Region
H.-C. Kim (Inha U.)	The structure of singly heavy baryons in a pion mean-field approach
S.-H. Kim (Soongsil U.)	$K^- p \to K \Xi$ reaction and Λ^* and Σ^* resonances
T.-S. H. Lee (Argonne Nat. Lab.)	Nucleon resonances/Pentaquark states in J/\Psi photo-production reaction on the nucleon
V. Mokeev (JLab)	Nucleon Resonance Electrocouplings and Emergence of Hadron Mass
S.-I. Nam (Pukyong Nat. U.)	Studies on the K Σ bound-state via $K^+ p \to K^+ \phi p$
H. Noumi (Osaka U.)	Studies of excited baryons with heavy flavors at J-PARC

Speaker	Title
G. Ramalho (U. Cruzeiro do Sul, Sao Paulo)	Covariant quark model calculations of nucleon resonance transition form factors and more
H. Sako (KEK/J-PARC)	Studies of baryon resonances with meson beams at J-PARC
H. Schmieden (U. Bonn)	The BGOOD experiment at ELSA and multi-quark structures in the uds-sector
Y. Wunderlich (U. Bonn)	Amplitude analysis and complete experiments for light baryon spectroscopy
B. G. Yu (Korea Aerospace U.)	Searching for exotics/hybrids in multi-pion photoproductions: focusing on tensor meson photoproductio
M. Zetenyi (Wigner Research Center for Phys.)	Electromagnetic interaction of baryon resonances in the timelike region studied via the reaction pi+N -> N e^+e^-

Organizers

Yongseok Oh (Co-Chair, Kyungpook National Univ./APCTP)
Kyungseon Joo (Co-Chair, Univ. of Connecticut)
Volker Burkert (Jefferson Lab.)
Philip Cole (Lamar Univ.)
Chueng-Ryong Ji (North Carolina State Univ.)
Tsung-Shung H. Lee (Argonne National Lab.)
Viktor Mokeev (Jefferson Lab.)
Beatrice Ramstein (IJCLab)
James Ritman (FZ Jülich)
Craig Roberts (Nanjing Univ.)
Hiroyuki Sako (JAEA)
Hartmut Schmieden (Univ. Bonn)

Contact

Should you have any questions, please contact

Yongseok Oh (yohknu@gmail.com) Cell-Phone: 010-6530-2951

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

Hosted and Sponsored by

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

Hotel Information

The venue is Jeju Suites Hotel and the map can be found at https://indico.knu.ac.kr/event/567/page/11-venue

The addresses of hotels are as follows.

The Suites Hotel Jeju
67, Jungmungwangwang-ro 72beon-gil, Seogwipo-si, Jeju-do, 63535, KOREA

The Hotel Bloom
53, Jungmungwangwang-ro 72beon-gil, Seogwipo-si, Jeju-do, 63535, KOREA

Travel Information

Transportation to Jeju Island

During the pandemic, direct international flights to/from Jeju (CJU) airport are not in service. All passengers from abroad should arrive at Seoul/Incheon (ICN) international airport and then transfer at Gimpo (GMP) airport to fly to Jeju. GMP is an airport inside Seoul. You can use a limousine bus or a train between ICN and GMP airports. (about 40 min. Airport Train Fare: KRW 4,000-5,000, Airport Bus Fare: KRW 7,500) There are many flights operated by Korean Air and Asiana Airlines as well as LCCs between GMP and CJU. (about 100 one-way flights per day. This is the world's busiest air route.) Please check with your local travel agency.

Public transport at ICN: https://www.airport.kr/ap_cnt/en/tpt/pblctpt/pblctpt.do
Korean Air (https://www.koreanair.com) Asiana Airlines (https://www.flyasiana.com)

Transportation from Jeju International Airport to the Venue

After arrival at Jeju airport, take a limousine (airport bus) # 600.

1. From the airport to the venue: The bus stop is at the ground floor and is near (left side of) Gate #5. The first bus leaves the airport at 6:00 AM. The service is almost every 18 minutes. Take off at the bus stop "The Suite Hotel" or at "Bloom Jeju Hotel/Korea Tourism Organization." (These stops are next to each other.) It takes about 50 minutes.

2. From the venue to the airport: The first bus leaves the Suite Hotel (or Bloom Hotel) at around 6:37 AM.

3. The bus fare depends on the traveling distance. The one-way fare between the airport and the hotels is KRW 4,500. You can pay the fare to the bus driver. Although bus drivers have some changes, we do not encourage using a bill of more than KRW 5,000.

4. More details can be found at hhttp://bus.jeju.go.kr/publicTrafficInformation/generalBusSchedule?viewtype=2 (in Korean).

5. If you use a taxi, the cost is about KRW 40,000 depending on traffic condition. If you use a taxi, you may show the following address to the driver.

(The Suites Hotel Jeju)

스위트 호텔 제주, 제주도 서귀포시 중문관광로 72번길 67

(The Hotel Bloom)

블룸 호텔, 제주도 서귀포시 중문관광로 72번길 53

1 USD is approximately KRW 1,250.

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 April 1, 2022, the quarantine is no longer required for international travelers who already have the 3rd (booster) shot recognized by the WHO. To have this benefit, the visitors should enroll at Q-code to report the shot history by uploading certificates. (This should be done with the pre-departure PCR test result.)

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/).

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. The LOC will help you to find the clinic. 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 requires the negative result of a PCR or antigen test performed within 24 hours before boarding to the US. (This means that if your flight is at 7 PM, July 5, the test should be done any time of July 4.) In Korea, you can take the test at (Incheon/Seoul) airport, but reservation is required. The LOC will be happy to assist you.

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

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