

## Workshop (APCTP PROGRAMS 2023)

**Origin of Matter and Masses in the Universe:  
Hadrons in free space, dense nuclear medium,  
and compact stars**

APCTP, Pohang, July 3 (Mon.) - July 8 (Sat.), 2023

# Organizers:

**Myung-Ki Cheoun:** OMEG Institute, Soongsil University, Seoul, Korea

**Anthony William Thomas:** The University of Adelaide, Australia

**Kazuo Tsushima:** UNICID (The University of the city of São Paulo), Brazil

## Plan: Time Schedule and Venue (tentative)

- APCTP Program category 2 (Focus Program)
- Duration: 1 week
- Dates: July 3 (Mon.) - July 8 (Sat.), 2023
- Venue: APCTP (Pohang)

## Organizers (O) and project members (PM)

- (O) Anthony W. Thomas, Prof. the University of Adelaide, Adelaide, Australia
- (O) Myung-Ki Cheoun, Prof. OMEG Institute, Soongsil University, Seoul, Korea
- (O) Kazuo Tsushima, Prof. Universidade Cidade de Sao Paulo (UNICID), Sao Paulo, Brazil
- (PM) Jesus Javier Cobos-Martínez, Prof. Sonora University, Sonora, Mexico
- (PM) Sang-Ho Kim (July 3 - 4), Prof. OMEG Institute, Soongsil University, Seoul, Korea
- (PM) Tsuyoshi Miyatsu, Prof. OMEG Institute, Soongsil University, Seoul, Korea
- (PM) Gilberto Ramalho, Prof. OMEG Institute, Soongsil University, Seoul, Korea

## Aims of the program

- Explore the “origin of matter and masses in the (visible) Universe”
- Study the hadron properties in free space, dense nuclear medium, and compact stars
- Further activation of the field (hadron physics and particle astrophysics) in Korea
- Establish new collaboration inside Korea as well as international

## Scientific topics

- **Baryon properties in free space and in nuclear matter**
- **Meson Properties in free space and in nuclear matter**
- **Nuclear reactions and scattering: For testing the in-medium baryon and meson properties**
- **Applications in astrophysics: Construct new equation of states (EoS) and reactions for compact star structure**

## Planned speakers: (c) confirmed below

- (c) Anthony W. Thomas, Prof., CSSM, the University of Adelaide, Australia
- (c) Liam Hockley, PhD student, CSSM, the University of Adelaide, Australia
- (c) Chueng-Ryong Ji, (July 8) Prof., North Carolina State University, USA
- Su-Hong Lee, Prof., Yonsei University
- (Registered) Ho-Meoyng Choi, Prof., Kyungpook National University
- (c) Chang Ho Hyun, Prof., Daegu University
- (c) Youngman Kim, Prof., Institute for Basic Science
- (talk?) Hana Gil, Prof. (CENuM, Korea University)
- Yeunhwan Lim, Prof., Yonsei University
- (c) Soonchul Choi, Prof., Institute for Basic Science
- Gil-ScoK Yang, Prof., Hoseo University
- Kyungsik Kim, Prof., Korea Aerospace University
- (c) Parada. T. P. Hutaauruk, Dr., Pukyong National University (PKNU)
- (c) Ahmad Jafar Arifi, Dr., Physics Lab, RIKEN (Hiyama lab), Japan
- (c) Jesus Javier Cobos-Martínez, Prof., Sonora University, Sonora, Mexico
- (c) Sang-Ho Kim (July 3-4), Prof., OMEG Institute, Soongsil University, Seoul, Korea
- (c) Tsuyoshi Miyatsu, Prof., OMEG Institute, Soongsil University, Seoul, Korea
- (c) Gilberto Ramalho, Prof., OMEG Institute, Soongsil University, Seoul, Korea
- (c) Guilherme N. Zeminiani, PhD student, University of City of Sao Paulo (UNICID), Brazil
- (c) Myung-Ki Cheoun, Prof., OMEG Institute, Soongsil University
- (c) Kazuo Tsushima, Prof., University of City of Sao Paulo (UNICID), Brazil