YIPQS long-term workshop

“Mean-field and Cluster Dynamics in Nuclear Systems 2022 (MCD2022)”

9 May—17 June, 2022

Onsite venue	Panasonic Hall at Yukawa Institute for Theoretical Physics, Kyoto University Access: https://www.yukawa.kyoto-u.ac.jp/en-GB/contents/guide/map (indicated as “Yukawa Hall”)
Online venue	Zoom See another PDF file or ask LOCs for Zoom URL

YUKAWA INSTITUTE FOR THEORETICAL PHYSICS

Yukawa Institute for Theoretical Physics, Kyoto University
Kitashirakawa Oiwakecho, Sakyo-ku, Kyoto 606-8502 Japan
TEL: +81-75-753-7000 | mcd2022@yukawa.kyoto-u.ac.jp |
www2.yukawa.kyoto-u.ac.jp/~mcd2022/

May 9 (Monday)

Time: JST = UTC+9

Opening address

09:00—09:10 (10 min.)
Hitoshi Nakada (Chiba, Co-chair), **Kazuyuki Ogata** (Kyushu/RCNP)
Opening address by the LOCs

Invited seminar

Chair: Yoshiko Kanada-En'yo (Kyoto)

Online
09:10—10:10 (60 min.)
Kristina D. Launey (Louisiana State)
Invited presentation
"Clustering and alpha-capture reactions from the ab initio symmetry-adapted no-core shell model"

Break

Discussion session

Led by Yoshiko Kanada-En'yo (Kyoto)

10:40—11:40 (60 min.)
Theme: "alpha cluster"
- How to measure cluster (experimentally and theoretically)
- Roles of the nuclear force in clustering

May 10 (Tuesday)

Time: JST = UTC+9

Discussion session

Led by Kouichi Hagino (Kyoto)

08:30—10:00 (90 min.) **Theme: “deuteron correlations”**

Break

Talks

Chair: Yoshiko Kanada-En’yo (Kyoto)

	10:30—11:05 (25 + 10 min.)	**Wataru Horiuchi** (Osaka Metropolitan)	“Describing localized nucleons near nuclear surface”
	11:05—11:40 (25 + 10 min.)	**Takashi Abe** (RIKEN)	“Alpha-cluster structure from first principles”
Online	11:40—12:00 (10 + 10 min.)	**Takaharu Otsuka** (Tokyo/RIKEN)	“Emerging of alpha clustering due to nuclear forces”
	12:00—12:35 (25 + 10 min.)	**Naoyuki Itagaki** (Osaka Metropolitan)	“Effect of non-central interactions for the cluster-shell competition”

May 11 (Wednesday)

Time: JST = UTC+9

Talks

Chair: Tokuro Fukui (RIKEN)

Online	13:00—13:35 (25 + 10 min.)	**Qing Zhao** (Huzhou)	“The alpha clustering within the microscopic cluster model in Be isotopes”
	13:35—14:10 (25 + 10 min.)	**Moemi Matsumoto** (Tohoku)	“Visualization of nuclear cluster correlations with microscopic wave functions”

Break

Student and young researcher session

Chair: Tokuro Fukui (RIKEN)

14:40—15:10 (20 + 10 min.)	**Yoshiki Chazono** (RIKEN)	“Importance of the breakup state of deuteron in the deuteron knockout reaction”
15:10—15:30 (15 + 5 min.)	**Hibiki Nakada** (RCNP)	“Description of deuteron-induced inclusive knockout reactions”
15:30—15:50 (15 + 5 min.)	**Tomoatsu Edagawa** (RCNP)	“Effective polarization in proton-induced α knockout reactions”
15:50—16:10 (15 + 5 min.)	**Shoto Watanabe** (Hokkaido)	“Nuclear data generation by machine learning”

May 12 (Thursday)

Time: JST = UTC+9

Invited seminars

Chair: Kazuyuki Ogata (Kyushu/RCNP)

14:00—15:00 (60 min.)	**Juzo Zenihiro** (Kyoto)	*Invited presentation* "The ONOKORO project"
15:00—16:00 (60 min.)	**Didier Beaumel** (IJCLab Orsay)	*Invited presentation* "Cluster structure of neutron-rich beryllium isotopes probed by quasifree scattering reactions in inverse kinematics"

Break

Discussion session

Led by Kazuyuki Ogata (Kyushu/RCNP)

16:20—17:20 (60 min.)

Theme: "Interplay between theory and experiment"

- What should theorists do to understand clustering via knockout reaction data?
- What is the best observables to extract information on nuclear clustering in normal and inverse kinematics?

May 13 (Friday)

Time: JST = UTC+9

Discussion session

Led by Yoshiko Kanada-En'yo (Kyoto) and Kazuyuki Ogata (Kyushu/RCNP)

13:00—15:00 (120 min.)

Theme: "Summary of the 1st week"