

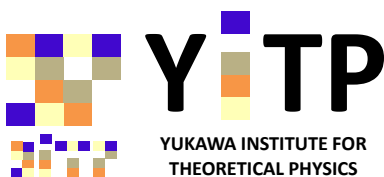
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SYMPOSIUM

# “Developments of Physics of Unstable Nuclei (YKIS2022b)”

23—27 May, 2022

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



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# May 23 (Monday)

Time: JST = UTC+9

Chair: N. Itagaki (Osaka Metropolitan)

- |             |                              |                                      |  |
|-------------|------------------------------|--------------------------------------|--|
|             | 09:50—10:00                  | <b>S. Aoki</b><br>(YITP)             | <i>Opening address by the director of YITP</i>   |
| 1<br>Online | 10:00—10:35<br>(30 + 5 min.) | <b>P. Navratil</b><br>(TRIUMF)       | <i>Invited presentation</i><br>“No-core shell model with continuum applications to nuclear astrophysics”                       |
| 2<br>Online | 10:35—11:10<br>(30 + 5 min.) | <b>W. H. Dickhoff</b><br>(St. Louis) | <i>Invited presentation</i><br>“Unified description of nuclear structure and reactions employing the dispersive optical model” |
| 3           | 11:10—11:45<br>(30 + 5 min.) | <b>T. Nakamura</b><br>(Tokyo Tech)   | <i>Invited presentation</i><br>“Spectroscopy of neutron dripline nuclei”   |

## Break

Chair: Y. Utsuno (JAEA)

- |             |                              |  |   |
|-------------|------------------------------|--|---|
| 4           | 13:30—13:50<br>(15 + 5 min.) | <b>T. Fukui</b><br>(RIKEN)                 | “Shell model study of chiral three-nucleon force”                                 |
| 5           | 13:50—14:10<br>(15 + 5 min.) | <b>T. Naito</b><br>(RIKEN)                 | “Toward ab initio charge symmetry breaking in nuclear energy density functionals” |
| 6           | 14:10—14:30<br>(15 + 5 min.) | <b>T. Furumoto</b><br>(Yokohama)           | “Study of nuclear reaction mechanism with complex transition density”             |
| 7<br>Online | 14:30—14:50<br>(15 + 5 min.) | <b>W. Horiuchi</b><br>(Osaka Metropolitan) | “Halo structure of $^{62,72}\text{Ca}$ within a core plus two-neutron model”      |

## Break

Chair: Y. Kanada-En'yo (Kyoto)

- |             |                              |                                |   |
|-------------|------------------------------|--------------------------------|---|
| 8<br>Online | 15:30—16:05<br>(30 + 5 min.) | <b>G. Hagen</b><br>(Oak Ridge) | <i>Invited presentation</i><br>“Structure of neutron rich neon and magnesium isotopes”                    |
| 9<br>Online | 16:05—16:40<br>(30 + 5 min.) | <b>P. Capel</b><br>(Mainz)     | <i>Invited presentation</i><br>“Using halo-EFT descriptions of nuclei within precise models of reactions” |

# May 24 (Tuesday)

Time: JST = UTC+9

Chair: D. Vretenar (Zagreb)

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|--------------|------------------------------|--------------------------------------|---|
| 10           | 10:00—10:35<br>(30 + 5 min.) | <b>P. Descouvemont</b><br>(Brussels) | <i>Invited presentation</i><br>“Halo effects in the $^{11}\text{Li}(p,t)^9\text{Li}$ reaction”              |
| 11<br>Online | 10:35—11:10<br>(30 + 5 min.) | <b>A. Afanasjev</b><br>(Mississippi) | <i>Invited presentation</i><br>“Exotic nuclei at low and high spins in covariant density functional theory” |
| 12           | 11:10—11:45<br>(30 + 5 min.) | <b>A. Tamii</b><br>(Osaka)           | <i>Invited presentation</i><br>“Electric dipole excitation of nuclei studied by proton scattering”          |

## Break

Chair: T. Oishi (YITP)

- |    |                              |                               |  |
|----|------------------------------|-------------------------------|--|
| 13 | 13:30—13:50<br>(15 + 5 min.) | <b>Y. Kobayashi</b><br>(Oita) | “Effects of quasiparticle resonance on decay spectrum of $^{21}\text{C}$ ”                   |
| 14 | 13:50—14:10<br>(15 + 5 min.) | <b>S. Ogawa</b><br>(Kyushu)   | “Study on the dineutron in the $2_1^+$ resonance of $^6\text{He}$ ”                          |
| 15 | 14:10—14:30<br>(15 + 5 min.) | <b>S. Shin</b><br>(Hokkaido)  | “Resonance states in light nuclei studied by analytic continuation in the coupling constant” |
| 16 | 14:30—14:50<br>(15 + 5 min.) | <b>M. Yamagami</b><br>(Aizu)  | “Momentum-space structure of dineutron in $^{11}\text{Li}$ and $^{22}\text{C}$ ”             |

## Break

Chair: A. Ohnishi (YITP)

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|--------------|------------------------------|---------------------------------|--|
| 17<br>Online | 15:30—16:05<br>(30 + 5 min.) | <b>E. G. Lanza</b><br>(Catania) | <i>Invited presentation</i><br>“Pygmy Dipole Resonances: a short overview”                       |
| 18<br>Online | 16:05—16:40<br>(30 + 5 min.) | <b>R. de Groote</b><br>(Leuven) | <i>Invited presentation</i><br>“Recent highlights in charge radii measurements of exotic nuclei” |

## May 25 (Wednesday)

Time: JST = UTC+9

Chair: P. Descouvemont (Brussels)

- |              |                              |                                      |   |
|--------------|------------------------------|--------------------------------------|---|
| 19<br>Online | 10:00—10:35<br>(30 + 5 min.) | <b>A. Volya</b><br>(Florida State)   | <i>Invited presentation</i><br>“Microscopic studies of alpha clustering using configuration interaction approach” |
| 20           | 10:35—11:10<br>(30 + 5 min.) | <b>M. Kimura</b><br>(Hokkaido/RIKEN) | <i>Invited presentation</i><br>“Monopole transitions as a probe for nuclear shape and clusters”                   |
| 21<br>Online | 11:10—11:45<br>(30 + 5 min.) | <b>Z. Ren</b><br>(Tongji)            | <i>Invited presentation</i><br>“Nucleon clustering and decay of nuclei”   |

### Break

Chair: T. Fukui (RIKEN)

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|--------------|------------------------------|---|--|
| 22           | 13:30—13:50<br>(15 + 5 min.) | <b>Y. Taniguchi</b><br>(Kagawa College) | “ $^{12}\text{C} + ^{12}\text{C}$ fusion astrophysical S-factor from a full-microscopic nuclear model”               |
| 23           | 13:50—14:10<br>(15+ 5 min.)  | <b>H. Motoki</b><br>(Hokkaido)          | “Cluster formation in light neutron-rich nuclei”   |
| 24           | 14:10—14:30<br>(15+ 5 min.)  | <b>K. Yako</b><br>(CNS)                 | “Double and single charge exchange reactions on $^{48}\text{Ca}$ by $^{12}\text{C}$ beam at 250AMeV”                 |
| 25           | 14:30—14:50<br>(15 + 5 min.) | <b>E. M. Tursunov</b><br>(Tashkent)     | “Astrophysical S factor and rate of $^7\text{Be}(p, \gamma)^8\text{B}$ direct capture reaction in a potential model” |
| 26<br>Online | 14:50—15:10<br>(15 + 5 min.) | <b>J. Cseh</b><br>(ATOMKI)              | “On the intersection of the cluster, shell and collective models”  |

### Break

Chair: M. Kimura (Hokkaido/RIKEN)

- |              |                              |                                    |  |
|--------------|------------------------------|------------------------------------|--|
| 27<br>Online | 15:30—16:05<br>(30 + 5 min.) | <b>A. Obertelli</b><br>(Darmstadt) | <i>Invited presentation</i><br>“Recent experimental results on $^{78}\text{Ni}$ and on several other nuclei” [TENTATIVE]     |
| 28           | 16:05—16:40<br>(30 + 5 min.) | <b>T. Otsuka</b><br>(Tokyo/RIKEN)  | <i>Invited presentation</i><br>“New facets of alpha-clustering and deformation towards driplines depicted by nuclear forces” |

## May 26 (Thursday)

Time: JST = UTC+9

Chair: K. Hagino (Kyoto)

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|--------------|------------------------------|-------------------------------|---|
| 29           | 10:00—10:35<br>(30 + 5 min.) | <b>S. Shimoura</b><br>(CNS)   | <i>Invited presentation</i><br>“Experiments on tetra-neutron resonance”                       |
| 30<br>Online | 10:35—11:10<br>(30 + 5 min.) | <b>D. Seweryniak</b><br>(ANL) | <i>Invited presentation</i><br>“Superallowed alpha decay near $^{100}\text{Sn}$ ”             |
| 31           | 11:10—11:45<br>(30 + 5 min.) | <b>T. Uesaka</b><br>(RIKEN)   | <i>Invited presentation</i><br>“Surface clustering studied by knockout reactions“ [TENTATIVE] |

### Break

Chair: N. Hinohara (Tsukuba)

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|--------------|------------------------------|--------------------------------|--|
| 32<br>Online | 13:30—13:50<br>(15 + 5 min.) | <b>R. Nakamoto</b><br>(Kansai) | “Extended Migdal-Watson formula for binary breakup reaction”                                 |
| 33           | 13:50—14:10<br>(15 + 5 min.) | <b>Y. Fujita</b><br>(RCNP)     | “Low-energy & high-energy super Gamow-Teller states formed on cluster core-nuclei”           |
| 34           | 14:10—14:30<br>(15 + 5 min.) | <b>H. Sagawa</b><br>(Aizu)     | “Second random phase approximation and nuclear collective motions”                           |
| 35           | 14:30—14:50<br>(15 + 5 min.) | <b>T. Saito</b><br>(Niigata)   | “Continuum RPA for microscopic description of direct neutron capture on neutron-rich nuclei” |

### Break

Chair: Y. Suzuki (Niigata)

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|--------------|------------------------------|--------------------------------|--|
| 36<br>Online | 15:30—16:05<br>(30 + 5 min.) | <b>J. L. Egido</b><br>(Madrid) | <i>Invited presentation</i><br>“The variety of nuclear shapes in super heavy elements” |
| 37           | 16:05—16:40<br>(30 + 5 min.) | <b>D. Vretenar</b><br>(Zagreb) | <i>Invited presentation</i><br>“Localization and clustering in nuclei”                 |

## May 27 (Friday)

Time: JST = UTC+9

Chair: M. Matsuo (Niigata)

- |    |                              |                                    |  |
|----|------------------------------|------------------------------------|--|
| 38 | 10:00—10:35<br>(30 + 5 min.) | <b>K. Yoshida</b><br>(Kyoto)       | <i>Invited presentation</i><br>“Mean-field based approach for collective excitations in neutron-rich nuclei”                           |
| 39 | 10:35—11:10<br>(30 + 5 min.) | <b>K. Sekizawa</b><br>(Tokyo Tech) | <i>Invited presentation</i><br>“Recent developments in microscopic theories for low-energy heavy-ion reactions: Towards SHE synthesis” |
| 40 | 11:10—11:45<br>(30 + 5 min.) | <b>N. Nishimura</b><br>(RIKEN)     | <i>Invited presentation</i><br>“Progress of the r-process theory in the era of nuclear experiments and astronomical observations”      |

### Break

Chair: K. Yoshida (Kyoto)

- |    |                              |                              |  |
|----|------------------------------|------------------------------|--|
| 41 | 13:30—13:50<br>(15 + 5 min.) | <b>T. Oishi</b><br>(YITP)    | “Nuclear spin-isospin excitations within the relativistic energy-density functional framework”   |
| 42 | 13:50—14:10<br>(15 + 5 min.) | <b>A. Odahara</b><br>(Osaka) | “Shape coexistence and shell evolution in neutron-rich Mg and Al nuclei studied by $\beta$ -decay spectroscopy with spin-polarized RI beams” |
| 43 | 14:10—14:30<br>(15 + 5 min.) | <b>Y. Suzuki</b><br>(RCNP)   | “Shape coexistence in N=28 neutron-rich nuclei”  |
| 44 | 14:30—14:50<br>(15 + 5 min.) | <b>S. Mizutori</b><br>(KUWS) | “Single particle properties in the cranked rod-shaped potential”   |

### Break

Chair: H. Nakada (Chiba)

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|--------------|------------------------------|--------------------------------|--|
| 45<br>Online | 15:10—15:35<br>(20 + 5 min.) | <b>P. Schuck</b><br>(Grenoble) | “Critical density of alpha-particle condensation in nuclear matter”                      |
| 46<br>Online | 15:35—16:10<br>(30 + 5 min.) | <b>S. M. Lenzi</b><br>(Padova) | <i>Invited presentation</i><br>“Experimental and shell model studies on mirror symmetry” |
| 47<br>Online | 16:10—16:45<br>(30 + 5 min.) | <b>J. Meng</b><br>(Beijing)    | <i>Invited presentation</i><br>“Search for triaxially deformed halo nucleus”             |