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Publications

Articles in Refereed Journals

16. “Ground state of super-heavy hydrogen ${}^7\text{H}$ ”;
M. Caamaño, T. Roger, A. Moro, G.F. Grinyer, J. Pancin, **S. Bagchi**, S. Sambhi, J. Gibelin, N. Itagaki, B. Fernández-Domínguez, J. Benlliure, D. Cortina, F. Farget, B. Jacquot, D. Pérez Loureiro, B. Pietras, R. Raabe, D. Ramos, C. Rodríguez-Tajes, H. Savajols, M. Vandebroutck;
Submitted in Physical Review Letters (Under review).
15. “Mass measurements of As, Se, and Br nuclei, and their implication on the proton-neutron interaction strength toward the $N = Z$ line”;
I. Mardor *et al.*
Physical Review C **103**, 034319 (2021).
[Journal](#); [arXiv](#)
14. “Signature of a possible α -cluster state in $N = Z$ doubly-magic ${}^{56}\text{Ni}$ ”;
S. Bagchi, H. Akimune, J. Gibelin, M.N. Harakeh, N. Kalantar-Nayestanaki, N.L. Achouri, B. Bastin, K. Boretzky, H. Bouzomita, M. Caamaño, L. Caceres, S. Damoy, F. Delaunay, B. Fernández - Domínguez, M. Fujiwara, U. Garg, G.F. Grinyer, O. Kamalou, E. Khan, A. Krasznahorkay, G. Lhoutellier, J.F. Libin, S. Lukyanov, K. Mazurek, M.A. Najafi, J. Pancin, Y. Penionzhkevich, L. Perrot, R. Raabe, C. Rigollet, T. Roger, S. Sambhi, H. Savajols, M. Senoville, C. Stodel, L. Suen, J.C. Thomas, M. Vandebroutck, J. Van de Walle;
The European Physical Journal **56**, 290 (2020).
[Journal](#); [arXiv](#)
13. “Two-neutron halo is unveiled in ${}^{29}\text{F}$ ”;
S. Bagchi, R. Kanungo, Y. K. Tanaka, H. Geissel, P. Doornenbal, W. Horiuchi, G. Hagen, T. Suzuki, T. Tsunoda, D. Ahn, H. Baba, K. Behr, F. Browne, S. Chen, M.L. Cortés, A. Estradé, N. Fukuda, M. Holl, K. Itahashi, N. Iwasa, S. Kaur, A.O. Macchiavelli, S. Matsumoto, S. Momiyama, I. Murray, T. Nakamura, H.J. Ong, T. Otsuka, S. Paschalis, A. Prochazka, C. Scheidenberger, P. Schrock, Y. Shimizu, D. Steppenbeck, H. Sakurai, D. Suzuki, H. Suzuki, S. Takeuchi, M. Takechi, H. Takeda, R. Taniuchi, K. Wimmer, K. Yoshida;
Physical Review Letters **124**, 222504 (2020).
[Journal](#); [arXiv](#)
12. “Mass and Half-Life Measurements of Neutron-Deficient Iodine Isotopes”;

S.A.S Andrés, A. Mollaebrahimi, T. Dickel, J. Bergmann, J. Ebert, H. Geissel, F. Greiner, E. Haettner, C. Hornung, N. Kalantar-Nayestanaki, I. Miskun, W.R. Plaß, S. Purushothaman, A.-K. Rink, C. Scheidenberger, H. Weick, **S. Bagchi**, P. Constantin, A. Finlay, S. Kaur, W. Lippert, I. Mardor, B. Mei, I. Moore, J.-H. Otto, S. Pietri, I. Pohjalainen, A. Prochazka, C. Rappold, M.P. Reiter, Y.K. Tanaka, J.S. Winfield;

The European Physical Journal **56**, 143 (2020).

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11. “Swelling of Doubly Magic ^{48}Ca core in Ca isotopes beyond $N = 28$ ”;

M. Tanaka, M. Takechi, A. Homma, M. Fukuda, D. Nishimura, T. Suzuki, T. Moriguchi, D.S. Ahn, A. Aimaganbetov, M. Amano, H. Arakawa, **S. Bagchi**, K.-H. Behr, N. Burtebayev, K. Chikaato, H. Du, S. Ebata, T. Fujii, N. Fukuda, H. Geissel, T. Hori, W. Horiuchi, S. Hoshino, R. Igosawa, A. Ikeda, N. Inabe, K. Inomata, K. Itahashi, T. Izumikawa, D. Kamioka, N. Kanda, I. Kato, I. Kenzhina, Z. Korkulu, Y. Kuk, K. Kusaka, K. Matsuta, M. Mihara, E. Miyata, D. Nagae, S. Nakamura, M. Nassurlla, K. Nishimuro, K. Nishizuka, K. Ohnishi, M. Ohtake, T. Ohtsubo, S. Ohmika, H.J. Ong, A. Ozawa, A. Prochazka, H. Sakurai, C. Scheidenberger, Y. Shimizu, T. Sugihara, T. Sumikama, H. Suzuki, S. Suzuki, H. Takeda, Y.K. Tanaka, I. Tanihata, T. Wada, K. Wakayama, S. Yagi, T. Yamaguchi, R. Yanagihara, Y. Yanagisawa, K. Yoshida, and T.K. Zholdybayev;

Physical Review Letters **124**, 102501 (2020).

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10. “Isomer studies in the vicinity of the doubly-magic nucleus ^{100}Sn : Observation of a new low-lying isomeric state in ^{97}Ag ”;

C. Hornung, D. Amanbayev, I. Dedes, G. Kripko-Koncz, I. Miskun, N. Shimizu, S.A.S Andrés, J. Bergmann, T. Dickel, J. Dudek, J. Ebert, H. Geissel, M. Górska, H. Grawe, F. Greiner, E. Haettner, T. Otsuka, W.R. Plaß, S. Purushothaman, A.-K. Rink, C. Scheidenberger, H. Weick, **S. Bagchi**, A. Blazhev, O. Charviakova, D. Curien, A. Finlay, S. Kaur, W. Lippert, J.-H. Otto, Z. Patyk, S. Pietri, Y.K. Tanaka, Y. Tsunoda, J.S. Winfield;

Physics Letters B **802**, 135200 (2020).

[Journal](#)

9. “Compression-mode resonances in the calcium isotopes and implications for the asymmetry term in nuclear incompressibility”;

K.B. Howard, U. Garg, M. Itoh, H. Akimune, **S. Bagchi**, T. Doi, Y. Fujikawa, M. Fujiwara, T. Furuno, M.N. Harakeh, Y. Hijikata, K. Inaba, S. Ishida, N. Kalantar-Nayestanaki, T. Kawabata, S. Kawashima, K. Kitamura, N. Kobayashi, Y. Matsuda, A. Nakagawa, S. Nakamura, K. Nosaka, S. Okamoto, S. Ota, S. Weyhmler, Z. Yang;

Physics Letters B **801**, 135185 (2020).

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8. “A Novel Method for the Measurement of Half-Lives and Decay Branching Ratios of Exotic Nuclei”;

I. Miskun, T. Dickel, I. Mardor, C. Hornung, D. Amanbayev, S.A. San Andrés, J. Bergmann, J. Ebert, H. Geissel, M. Górska, F. Greiner, E. Haettner, W.R. Plaß, S. Purushothaman, C.

Scheidenberger, A.-K. Rink, H. Weick, **S. Bagchi**, P. Constantin, S. Kaur, W. Lippert, B. Mei, I. Moore, J.-H. Otto, S. Pietri, I. Pohjalainen, A. Prochazka, C. Rappold, M.P. Reiter, Y.K. Tanaka, J.S. Winfield;

The European Physical Journal A **55**, 148 (2019).

[Journal](#); [arXiv](#)

7. “High-resolution, accurate multiple-reflection time-of-flight mass spectrometry for short-lived, exotic nuclei of few events in their ground and low-lying isomeric states”;

S.A.S. Andrés, C. Hornung, J. Ebert, W.R. Plaß, T. Dickel, H. Geissel, C. Scheidenberger, J. Bergmann, F. Greiner, E. Haettner, C. Jesch, W. Lippert, I. Miskun, Z. Patyk, S. Pietri, A. Pihktelev, S. Purushothman, M.P. Reiter, A.-K. Rink, H. Weick, M.I. Yavor, **S. Bagchi**, P. Constantin, M. Diwisch, A. Finlay, S. Kaur, R. Knöbel, J. Lang, I. Mardor, B. Mei, I.D. Moore, J.-H. Otto, I. Pohjalainen, A. Prochazka, C. Rappold, M. Takechi, Y.K. Tanaka, J.S. Winfield, X. Xu;

Physical Review C **99**, 064313 (2019) .

[Journal](#); [arXiv](#)

6. “Neutron skin and signature of the $N = 14$ shell gap found from measured proton radii of $^{17-22}\text{N}$ ”;

S. Bagchi, R. Kanungo, W. Horiuchi, G. Hagen, T.D. Morris, S.R. Stroberg, T. Suzuki, F. Ameil, J. Atkinson, Y. Ayyad, D. Cortina-Gil, I. Dillmann, A. Estradé, A. Evdokimov, F. Farinon, H. Geissel, G. Guastalla, R. Janik, S. Kaur, R. Knöbel, J. Kurcewicz, Yu.A. Litvinov, M. Marta, M. Mostazo, I. Mukha, C. Nociforo, H.J. Ong, S. Pietri, A. Prochazka, C. Scheidenberger, B. Sitar, P. Strmen, M. Takechi, J. Tanaka, Y. Tanaka, I. Tanihata, S. Terashima, J. Vargas, H. Weick, J.S. Winfield;

Physics Letters B **790**, 251–256 (2019).

[Journal](#); [arXiv](#)

5. “Multi-messenger investigation of the Pygmy Dipole Resonance in ^{140}Ce ”;

D. Savran, V. Derya, **S. Bagchi**, J. Endres, M.N. Harakeh, J. Isaak, N. Kalantar-Nayestanaki, E.G. Lanza, B. Löher, A. Najafi, S. Pascu, S.G. Pickstone, N. Pietralla, V.Yu. Ponomarev, C. Rigollet, C. Romig, M. Spieker, A. Vitturi, and A. Zilges;

Physics Letters B **786**, 16–20 (2018).

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4. “Nuclear-matter radius studies from $^{58}\text{Ni}(\alpha, \alpha)$ experiments at the GSI Experimental Storage Ring with the EXL facility”;

J.C. Zamora, T. Aumann, **S. Bagchi**, S. Bönig, M. Csatlós, I. Dillmann, C. Dimopoulou, P. Egelhof, V. Eremin, T. Furuno, H. Geissel, R. Gernhäuser, M.N. Harakeh, A.-L. Hartig, S. Ilieva, N. Kalantar-Nayestanaki, O. Kiselev, H. Kollmus, C. Kozhuharov, A. Krasznahorkay, Th. Kröll, M. Kuilman, S. Litvinov, Yu.A. Litvinov, M. Mahjour-Shafiei, M. Mutterer, D. Nagae, M.A. Najafi, C. Nociforo, F. Nolden, U. Popp, C. Rigollet, S. Roy, C. Scheidenberger, M. von Schmid, M. Steck, B. Streicher, L. Stuhl, M. Thürauf, T. Uesaka, H. Weick, J.S. Winfield, D. Winters, P.J. Woods, T. Yamaguchi, K. Yue, J. Zenihiro;

Physical Review C **96**, 034617 (2017).

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3. “First measurement of isoscalar giant resonances in a stored-beam experiment”;
J.C. Zamora, T. Aumann, **S. Bagchi**, S. Bönig, M. Csatlós, I. Dillmann, C. Dimopoulou, P. Egelhof, V. Eremin, T. Furuno, H. Geissel, R. Gernhäuser, M.N. Harakeh, A.-L. Hartig, S. Ilieva, N. Kalantar-Nayestanaki, O. Kiselev, H. Kollmus, C. Kozhuharov, A. Krasznahorkay, Th. Kröll, M. Kuilman, S. Litvinov, Yu.A. Litvinov, M. Mahjour-Shafiei, M. Mutterer, D. Nagae, M.A. Najafi, C. Nociforo, F. Nolden, U. Popp, C. Rigollet, S. Roy, C. Scheidenberger, M. von Schmid, M. Steck, B. Streicher, L. Stuhl, M. Thürauf, T. Uesaka, H. Weick, J.S. Winfield, D. Winters, P.J. Woods, T. Yamaguchi, K. Yue, J. Zenihiro;
Physics Letters B **763**, 16–19 (2016).
[Journal](#)
2. “Observation of isoscalar multipole strengths in exotic doubly-magic ^{56}Ni in inelastic α scattering in inverse kinematics”;
S. Bagchi, J. Gibelin, M.N. Harakeh, N. Kalantar-Nayestanaki, N.L. Achouri, H. Akimune, B. Bastin, K. Boretzky, H. Bouzomita, M. Caamaño, L. Caceres, S. Damoy, F. Delaunay, B. Fernández - Domínguez, M. Fujiwara, U. Garg, G.F. Grinyer, O. Kamalou, E. Khan, A. Krasznahorkay, G. Lhoutellier, J.F. Libin, S. Lukyanov, K. Mazurek, M.A. Najafi, J. Pancin, Y. Penionzhkevich, L. Perrot, R. Raabe, C. Rigollet, T. Roger, S. Sambi, H. Savajols, M. Senoville, C. Stodel, L. Suen, J.C. Thomas, M. Vandebrouck, J. Van de Walle;
Physics Letters B **751**, 371–375 (2015).
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1. “A neutron spectrometer for studying giant resonances with (p,n) reactions in inverse kinematics”;
L. Stuhl, A. Krasznahorkay, M. Csatlós, A. Algora, J. Gulyás, G. Kalinka, J. Timár, N. Kalantar-Nayestanaki, C. Rigollet, **S. Bagchi**, M.A. Najafi;
Nuclear Instruments and Methods in Physics Research Section A **736**, 1–9 (2014).
[Journal](#); [arXiv](#)

Conference proceedings

16. “Structure of superheavy hydrogen ^7H ”;
M. Caamaño, *et al.*, (**S. Bagchi**);
European Physical Journal Web of Conferences **232**, 04002 (2020).
[Proceedings](#)
15. “Development of a method to deduce point-proton radii from charge changing cross sections”;
A. Homma, *et al.*, (**S. Bagchi**);
JPS Conference Proceedings **32**, 010032 (2020).
[Proceedings](#)
14. “Spectroscopy of η' -Mesic nuclei with WASA at GSI/FAIR”;
Y. K. Tanaka, *et al.*, (**S. Bagchi**);
Acta Physica Polonica B **51**, 1 (2020).

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13. “Measurement of proton-distribution radii of neutron-rich nitrogen isotopes”;
S. Bagchi, R. Kanungo, *et al.*,
European Physical Journal Web of Conferences **223**, 01003 (2019).
[Proceedings](#)
12. “Search for Borromean halo structure in the Island of Inversion”;
S. Bagchi, R. Kanungo, *et al.*,
Proceedings of the DAE-BRNS Symposium on Nuclear Physics **63**, 414–415 (2018).
11. “Study of proton distribution of neutron-rich nitrogen isotopes through charge-changing cross section measurements”;
S. Bagchi, R. Kanungo, *et al.*,
Proceedings of the DAE-BRNS Symposium on Nuclear Physics **61**, 348–349 (2016).
10. “Nuclear reactions in the storage ring ESR with EXL”;
Th. Kröll, *et al.*, (**S. Bagchi**);
Journal of Physics: Conference Series **724**, 012026 (2016).
[Proceedings](#)
9. “Nuclear astrophysics with radioactive ions at FAIR”;
R. Reifarth, *et al.*, (**S. Bagchi**);
Journal of Physics: Conference Series **665**, 012044 (2016).
[Proceedings](#); [arXiv](#)
8. “Nuclear transfer reaction measurements at the ESR - for the investigation of the astrophysical $^{15}\text{O}(\alpha, \gamma)^{19}\text{Ne}$ reaction”;
D.T. Doherty, *et al.*, (**S. Bagchi**);
Physica Scripta **T166**, 014007 (2015).
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7. “Isoscalar giant resonance studies in a stored-beam experiment within EXL”;
J.C. Zamora, *et al.*, (**S. Bagchi**);
Physica Scripta **T166**, 014006 (2015).
[Proceedings](#)
6. “Investigation of the Nuclear Matter Distribution of ^{56}Ni by Elastic Proton Scattering in Inverse Kinematics”;
M. von Schmid, *et al.*, (**S. Bagchi**);
Physica Scripta **T166**, 014005 (2015).
[Proceedings](#)
5. “First Nuclear Reaction Experiment with Stored Radioactive ^{56}Ni Beam and Internal Hydrogen and Helium Targets”;
P. Egelhof, *et al.*, (**S. Bagchi**);
JPS Conference Proceedings **6**, 020049 (2015).

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4. “First EXL experiment with stored radioactive beam: Proton scattering on ^{56}Ni ”;
M. von Schmid, *et al.*, (**S. Bagchi**);
European Physical Journal Web of Conferences **66**, 03093 (2014).
[Proceedings](#)
3. “Alpha cluster structure in ^{56}Ni ”;
H. Akimune, *et al.*, (**S. Bagchi**);
Journal of Physics: Conference Series **436**, 012010 (2013).
[Proceedings](#)
2. “Neutron-skin thickness from the study of the anti-analog giant dipole resonance”;
A. Krasznahorkay, *et al.*, (**S. Bagchi**);
AIP Conference Proceedings **1491**, 190–197 (2012).
[Proceedings](#); [arXiv](#)
1. “Feasibility Studies for the EXL Project at FAIR”;
K. Yue, *et al.*, (**S. Bagchi**);
Proceedings of Science **STORF’11**, 014 (2011).
[Proceedings](#)