Synthèse des articles SEASTAR RIKEN du DPhN/LENA 2022

Mars 2022

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Publications des résultats d'expériences de spectroscopie Seastar 1-3
(Campagnes RIKEN RIBF de 2014, 2015 et 2017)

Seastar-1 en 2014: S^{*14} ; Seastar-3 en 2015 : S^{*15} ; Seastar-3 en 2017 : S^{*17}

(p,pN) cross sections

[p3p] $S^{*15\text{-}17}$ A. Frotscher *et al.*, Phys. Rev. Lett. **125**, 012501 (2020). doi: 10.1103/PhysRevLett.125.012501
[ppN] $S^{*15\text{-}17}$ N. Paul *et al.*, Phys.Rev.Lett. **122**, 162503 (2019). doi: 10.1103/PhysRevLett.122.162503
[Nipp] S^{*14} M.L. Cortes *et al.*, Phys. Rev. C **97**, 044315 (2018). doi : 10.1103/PhysRevC.97.044315

Around Z=20

[47,49Cl] B.D. Linh *et al.*, Phys.Rev.C **104**, 044331 (2021) doi:10.1103/PhysRevC.104.044331
[50Ar] S^{*17} M. L. Cortés *et al.*, Phys. Rev. C **102**, 064320 (2020). doi: 10.1103/PhysRevC.102. 064320
[51Ar] S^{*17} M.M. Juhasz et al.,Phys.Lett. B **814**, 136108 (2021). doi: 10.1016/ j.physletb.2021.136108
[52Ar] S^{*17} H. N. Liu *et al.*, Phys. Rev. Lett. **122**, 072502 (2019) doi: 10.1103/PhysRevLett.122.072502
[51,53K] S^{*17} Y.L. Sun et al., Phys. Lett. B **802**, 135215 (2020) doi: 10.1016/j.physletb.2020.135215
[55K;55,57Ca] S^{*17} T. Koiwai *et al.,* Phys.Lett. B **827**, 136953 (2022). doi: 10.1016/ j.physletb.2022.136953
[54Ca_2] S^{*17} F. Browne *et al.*, Phys. Rev. Lett. **126**, 252501 (2019). doi:10.1103/PhysRevLett.126.252501
[54Ca_1] S^{*17} S. Chen *et al.*, Phys. Rev. Lett. **123**, 142501 (2019). doi:10.1103/PhysRevLett.123.142501
[62Ti] S^{*17} M. L Cortès *et al.*, Phys. Lett. B **800**, 135071 (2020) doi: 10.1016/ j.physletb.2019.135071
[63V] S^{*17} M.M. Juhasz et al., Phys. Rev. C **103**, 064308 (2021). doi: 10.1103/PhysRevC.103. 064308

Around Z=28

[72Fe,66Cr] S^{*14} C. Santamaria *et al.*, Phys. Rev. Lett. **115**, 192501 (2015). doi: 10.1103/PhysRevLett.115.192501
[78Ni] S^{*14} R. Taniuchi *et al.*, Nature (London) **569**, 53 (2019). doi: 10.1038/s41586-019-1155-x
[76Ni] S^{*14} Z. Elekes *et al.*, Phys. Rev. C **99**, 014312 (2019) doi: 10.1103/PhysRevC.99.014312
[79Cu] S^{*14} L. Olivier *et al.*, Phys. Rev. Lett. **119**, 192501 (2017). doi: 10.1103/PhysRevLett.119.192501
[79CuB] S^{*14} L. Olivier *et al.*, *Erratum*. Phys.Rev.Lett. **121**, 099902 (E) (2018). doi: 10.1103/PhysRevLett.121.099902
[67Mn] S^{*14} X.Y. Liu *et al.*, Phys. Lett. B **784**, 392 (2018) doi: 10.1016/j.physletb.2018.06.067
[84Zn] S^{*15} C. Shand et al., Phys. Lett. B **773**, 492 (2017). doi: 10.1016/j.physletb.2017.09.001
[69,71,73Co] S^{*14} T. Lokotko, et al., Phys. Rev. C **101**, 034314 (2020). doi:10.1103/PhysRevLett.101.034314

Around Z = 36, 40

[88Ge] S^{*15} M. Lettmann *et al.*, Phys. Rev. C **96**, 011301 (2017). doi: 10.1103/PhysRevC.96.011301
[92,94Se] S^{*15} C. Lizarazo et al., Phys. Rev. Lett. **124**, 222501 (2020) doi:10.1103/PhysRevLett.124.222501
[94Se] S^{*15} S. Chen *et al.*, Phys. Rev. C **95**, 041302(R) (2017). doi: 10.1103/PhysRevC.95.041302
[94-96Kr] S^{*15} R.-B. Gerst et al. Phys. Rev. C **105**, 024302 (2022). doi : 10.1103/PhysRevC.105.024302
[100Kr] S^{*15} F. Flavigny *et al.*, Phys. Rev. Lett. **118**, 242501 (2017). doi: 10.1103/PhysRevLett.118.242501
[110Zr] S^{*15} N. Paul *et al.*, Phys. Rev. Lett. **118**, 032501 (2017). doi: 10.1103/PhysRevLett.118.032501

[78Ni] Nature (London) **569**, 53 (2019). cf Fait marquant IRFU /DRF
Le noyau exotique de 78Ni rejoint le club fermé des noyaux doublement magiques
http://irfu.cea.fr/Phocea/Vie_des_labos/Ast/ast.php?t=fait_marquant&id_ast=4576
DRF Noyau de nickel 78 : exotique et doublement magique
http://www.cea.fr/drf/Pages/Actualites/En-direct-des-labos/2019/noyau-de-nickel--exotique-et-doublement-magique-.aspx

Résultats des campagnes RIKEN RIBF Samurai 18 (2014) et Samurai 21 (2015)

SAMURAI 21 - 2015

[28O] *Discovery of 28O*
Y. Kondo *et al. (SAMURAI21 collaboration), in preparation (2022).*

[28F] *Extending the Southern Shore of the Island of Inversion to 28F*
A. Revel *et al. (SAMURAI21 collaboration),* Phys. Rev. Lett. **124**, 152502 (2020). doi: 10.1103/PhysRevLett.124. 152502

[29Ne] *Border of the island of inversion: Unbound states in ^{29}Ne,*
M. Holl *et al. (SAMURAI21 collaboration),* Phys. Rev. C **105**, 034301 (2022). doi: 10.1103/PhysRevC.105.034301

SAMURAI 18 - 2014

[17B] *Quasifree Neutron Knockout Reaction Reveals a Small s-Orbital Component in the Borromean Nucleus ^{17}B*
Z.H.Yang et al., Phys.Rev.Lett. **126**, 082501 (2021). doi: 10.1103/PhysRevLett.126. 082501

[11Li] *Surface Localization of the Dineutron in ^{11}Li*
Y. Kubota et al., Phys.Rev.Lett. **125**, 252501 (2020). doi: 10.1103/PhysRevLett.125. 252501

[13Be] *Structure of ^{13}Be probed via quasi-free scattering*
A. Corsi et al., Phys.Lett. B **797**, 134843 (2019). doi: 10.1016/j.physletb.2019.134843