









Studies of light exotic nuclei in the vicinity of neutron and proton drip lines at FLNR JINR

Uspekhi Fizicheskikh Nauk, 2016, **186**:4, 337–386

References


























- [1] *National Nuclear Data Center. Brookhaven National Laboratory*, <http://www.nndc.bnl.gov/>
- [2] *ACCULINNA. JINR*, <http://aculina.jinr.ru/>
- [3] Fomichev A. S. et al., Preprint E13-2008, JINR, Dubna, 2008
- [4] Grigorenko L. V., *Phys. Part. Nucl.*, **40** (2009), 674  
- [5] Fomichev A. S. et al., Preprint JINR E7-2012-73, JINR, Dubna, 2012
- [6] Ter-Akopian G. M., Sidorchuk, S I, Grigorenko L. V., *McGraw-Hill Yearbook of Science and Technology*, McGraw-Hill, New York, 2012
- [7] Grigorenko L., Fomichev A., Ter-Akopian G., *Nucl. Phys. News*, **24**:4 (2014), 22 
- [8] Baz' A. I., *Sov. Phys. JETP*, **6** (1958), 709
- [9] Mukha I. et al., *Phys. Rev. Lett.*, **99** (2007), 182501  
- [10] *GSI Helmholtzzentrum für Schwerionenforschung GmbH*, <http://www.gsi.de/>
- [11] *FAIR: Facility for Antiproton and Ion Research Europe GmbH*, <http://www.fair-center.eu>
- [12] *RIKEN Nishina Center for Accelerator-Based Science (RNC)*, <http://www.riken.jp/en/research/labs/rnc/>
- [13] *National Superconducting Cyclotron Laboratory Michigan State Univ.*, <http://www.nscl.msu.edu/>
- [14] *GANIL SPIRAL2 Grand Accélérateur National d'Ions Lourds*, <http://www.ganil-spiral2.eu/>
- [15] Toschek P. E., “Atomic particles in traps”, *New Trends in Atomic Physics, Course 3, Les Houches, Session XXXVIII, June 28 - July 29, 1982*, V. 158, G. Grynberg, R. Stora, Elsevier, Amsterdam, 1989, 451
- [16] Brown L. S., Gabrielse G., *Rev. Mod. Phys.*, **58** (1986), 233  
- [17] Franzke B., Geissel H., Münzenberg G., *Mass Spectrom. Rev.*, **21** (2008), 428  
- [18] Litvinov Y. A. et al., *Acta Phys. Pol. B*, **41** (2010), 511 
- [19] Dickel T. et al., *Nucl. Instrum. Meth. Phys. Res. A*, **777** (2015), 172  
- [20] Akkoyun S. et al., *Nucl. Instrum. Meth. Phys. Res. Sec. A*, **668** (2012), 26  
- [21] Hofmann S. et al., *Z. Phys. A*, **305** (1982), 111  
- [22] Pfützner M. et al., *Eur. Phys. J. A*, **14** (2002), 279  
- [23] Giovinazzo J. et al., *Phys. Rev. Lett.*, **89** (2002), 102501  
- [24] Grigorenko L. V. et al., *Phys. Rev. C*, **84** (2011), 021303(R)  
- [25] Pfützner M., Karny M., Grigorenko L. V., Riisager K., *Rev. Mod. Phys.*, **84** (2012), 567  
- [26] Rodin A. M. et al., *Nucl. Instrum. Meth. Phys. Res. B*, **204** (2003), 114  
- [27] *Flerov Laboratory of Nuclear Reactions. The Dubna Radioactive Ion Beam*, <http://159.93.28.88/flnr/dribs.html>

- [28] Oganessian Yu. Ts. et al., *Z. Phys. A*, **341** (1992), 217 [crossref](#) [WEB OF SCIENCE™](#)
- [29] *The Institute of Modern Physics (IMP) of the Chinese Academy of Sciences*, <http://english.imp.cas.cn/>
- [30] Antonov A. N. et al., *Nucl. Instrum. Meth. Phys. Res. A*, **637** (2011), 60 [crossref](#) [WEB OF SCIENCE™](#)
- [31] Treiman S. B., Yang C. N., *Phys. Rev. Lett.*, **8** (1962), 140 [crossref](#)
- [32] Shapiro I. S., Kolybasov V. M., Augst G. R., *Nucl. Phys.*, **61** (1965), 353 [crossref](#)
- [33] Sitenko A. G., *Teoriya yadernykh reaksii*, Energoatomizdat, M., 1983; Sitenko A. G., *Theory of Nuclear Reactions*, World Scientific, Singapore, 1990
- [34] Satchler G. R., *Direct Nuclear Reactions*, Clarendon Press, Oxford, 1983
- [35] Bromley D. A. (Ed.), *Treatise on Heavy-Ion Science*, Plenum, New York, 1984–1989
- [36] Mukha I. et al., *Phys. Rev. Lett.*, **115** (2015), 202501 [crossref](#) [WEB OF SCIENCE™](#)
- [37] Artemov K. P. et al., *Sov. J. Nucl. Phys.*, **52** (1990), 408
- [38] Goldberg V. Z. et al., *JETP Lett.*, **67** (1998), 1013 [crossref](#) [WEB OF SCIENCE™](#)
- [39] Markenroth K. et al., *Phys. Rev. C*, **62** (2000), 034308 [crossref](#) [WEB OF SCIENCE™](#)
- [40] Assié M. et al., *Phys. Lett. B*, **712** (2012), 198 [crossref](#) [WEB OF SCIENCE™](#)
- [41] Fifield L. K., Balamuth D. P., Zurmühle R. W., *Phys. Rev. C*, **15** (1977), 1595(R) [crossref](#)
- [42] Biedenharn L. C., Rose M. E., *Rev. Mod. Phys.*, **25** (1953), 729 [crossref](#)
- [43] Barabanov A. L., *Simmetrii i spin-uglovye korrelyatsii v reaktsiyakh i raspadakh*, Fizmatlit, M., 2010
- [44] Artemov K. P. i dr., *YaF*, **14** (972), 1105; Artemov K. P. et al., *Sov. J. Nucl. Phys.*, **14** (1972), 615
- [45] Miernik K. et al., *Phys. Rev. Lett.*, **99** (2007), 192501 [crossref](#) [WEB OF SCIENCE™](#)
- [46] Grigorenko L. V. et al., *Phys. Lett. B*, **677** (2009), 30 [crossref](#) [WEB OF SCIENCE™](#)
- [47] Egorova I. A. et al., *Phys. Rev. Lett.*, **109** (2012), 202502 [crossref](#) [WEB OF SCIENCE™](#)
- [48] Simonov Yu. A., *Sov. J. Nucl. Phys.*, **3** (1966), 461
- [49] Badalian A. M., Simonov Yu. A., *Sov. J. Nucl. Phys.*, **3** (1966), 755
- [50] Smirnov Yu. F., Shitikov K. V., *EChAYa*, **8** (1977), 847
- [51] Baz' A. I., Zhukov M. V., *Sov. J. Nucl. Phys.*, **11** (1970), 435
- [52] Vostrikov A. N., Zhukov M. V., *Sov. J. Nucl. Phys.*, **26** (1977), 377
- [53] Demin V. F., Pokrovsky Yu. E., Efros V. D., *Phys. Lett. B*, **44** (1973), 227 [crossref](#)
- [54] Efros V. D., *Sov. J. Nucl. Phys.*, **15** (1972), 128
- [55] Dzhibuti R. I., Shitikova K. V., *Metod gipersfericheskikh funktsii v atomnoi i yadernoi fizike*, Energoatomizdat, M., 1993
- [56] Zhukov M. V. et al., *Phys. Rep.*, **231** (1993), 151 [crossref](#) [WEB OF SCIENCE™](#)
- [57] Ershov S. N., Grigorenko L. V., Vaagen J. S., Zhukov M. V., *J. Phys. G*, **37** (2010), 064026 [crossref](#) [WEB OF SCIENCE™](#)
- [58] Grigorenko L. V. et al., *Phys. Rev. Lett.*, **85** (2000), 22 [crossref](#) [WEB OF SCIENCE™](#)
- [59] Danilin B. V. et al., *Phys. Rev. C*, **43** (1991), 2835 [crossref](#) [WEB OF SCIENCE™](#)
- [60] Grigorenko L. V. et al., *Phys. Rev. C*, **57** (1998), R2099 [crossref](#) [WEB OF SCIENCE™](#)
- [61] Grigorenko L. V. et al., *Phys. Rev. C*, **64** (2001), 054002 [crossref](#) [WEB OF SCIENCE™](#)
- [62] Grigorenko L. V., Zhukov M. V., *Phys. Rev. C*, **77** (2008), 034611 [crossref](#) [WEB OF SCIENCE™](#)
- [63] Grigorenko L. V. et al., *Phys. Rev. C*, **80** (2009), 034602 [crossref](#) [WEB OF SCIENCE™](#)
- [64] Tanihata I. et al., *Phys. Rev. Lett.*, **55** (1985), 2676 [crossref](#) [WEB OF SCIENCE™](#)
- [65] Kukulin V. I. et al., *Nucl. Phys. A*, **453** (1986), 365 [crossref](#) [WEB OF SCIENCE™](#)
- [66] Danilin B. V. et al., *Sov. J. Nucl. Phys.*, **48** (1988), 766
- [67] Ikeda K., 1988, in Japanese

- [68] Aumann T., *Eur. Phys. J. A*, **26** (2005), 441 [crossref](#) [WEB OF SCIENCE™](#)
- [69] Schümann F. et al., *Phys. Rev. Lett.*, **90** (2003), 232501 [crossref](#) [WEB OF SCIENCE™](#)
- [70] Cortina-Gil D. et al., *Nucl. Phys. A*, **720** (2003), 3 [crossref](#) [WEB OF SCIENCE™](#)
- [71] Grigorenko L. V. et al., *Phys. Lett. B*, **641** (2006), 254 [crossref](#) [WEB OF SCIENCE™](#)
- [72] Hammache F. et al., *Phys. Rev. C*, **82** (2010), 065803 [crossref](#) [WEB OF SCIENCE™](#)
- [73] Marganiec J. et al., *J. Phys. Conf. Ser.*, **337** (2012), 012011 [crossref](#) [WEB OF SCIENCE™](#)
- [74] Kanungo R. et al., *Phys. Rev. Lett.*, **114** (2015), 192502 [crossref](#) [WEB OF SCIENCE™](#)
- [75] Nakamura T. et al., *Phys. Rev. Lett.*, **96** (2006), 252502 [crossref](#) [WEB OF SCIENCE™](#)
- [76] Goldansky V. I., *Nucl. Phys.*, **19** (1960), 482 [crossref](#)
- [77] Zel'dovich Ya. B., *Sov. Phys. JETP*, **11** (1960), 812
- [78] Goldansky V. I., *Nucl. Phys.*, **27** (1961), 648 [crossref](#)
- [79] Galitsky V. M., Cheltsov V. F., *Nucl. Phys.*, **56** (1964), 86 [crossref](#)
- [80] Brown B. A., *Phys. Rev. C*, **43** (1991), R1513 [crossref](#) [WEB OF SCIENCE™](#)
- [81] Barker F. C., *Phys. Rev. C*, **63** (2001), 047303 [crossref](#) [WEB OF SCIENCE™](#)
- [82] Brown B. A., Barker F. C., *Phys. Rev. C*, **67** (2003), 041304(R) [crossref](#) [WEB OF SCIENCE™](#)
- [83] Dossat C. et al., *Phys. Rev. C*, **72** (2005), 054315 [crossref](#) [WEB OF SCIENCE™](#)
- [84] Blank B. et al., *Phys. Rev. Lett.*, **94** (2005), 232501 [crossref](#) [WEB OF SCIENCE™](#)
- [85] Mukha I. et al., *Phys. Rev. C*, **77** (2008), 061303(R) [crossref](#) [WEB OF SCIENCE™](#)
- [86] Ascher P. et al., *Phys. Rev. Lett.*, **107** (2011), 102502 [crossref](#) [WEB OF SCIENCE™](#)
- [87] Grigorenko L. V., Mukha I. G., Zhukov M. V., *Nucl. Phys. A*, **713** (2003), 372 [crossref](#) [WEB OF SCIENCE™](#); **740** (2004), 401, erratum [crossref](#) [WEB OF SCIENCE™](#)
- [88] Grigorenko L. V., Mukha I. G., Zhukov M. V., *Nucl. Phys. A*, **714** (2003), 425 [crossref](#) [WEB OF SCIENCE™](#)
- [89] Grigorenko L. V., Zhukov M. V., *Phys. Rev. C*, **68** (2003), 054005 [crossref](#) [WEB OF SCIENCE™](#)
- [90] Grigorenko L. V., Zhukov M. V., *Phys. Rev. C*, **76** (2007), 014008 [crossref](#) [WEB OF SCIENCE™](#)
- [91] Grigorenko L. V., Zhukov M. V., *Phys. Rev. C*, **76** (2007), 014009 [crossref](#) [WEB OF SCIENCE™](#)
- [92] Grigorenko L. V. et al., *Phys. Rev. C*, **82** (2010), 014615 [crossref](#) [WEB OF SCIENCE™](#)
- [93] Brown K. W. et al., *Phys. Rev. Lett.*, **113** (2014), 232501 [crossref](#) [WEB OF SCIENCE™](#)
- [94] Fomichev A. S. et al., *Int. J. Mod. Phys. E*, **20** (2011), 1491 [crossref](#) [WEB OF SCIENCE™](#)
- [95] Grigorenko L. V., Zhukov M. V., *Phys. Rev. C*, **72** (2005), 015803 [crossref](#) [WEB OF SCIENCE™](#)
- [96] Görres J., Wiescher M., Thielemann F.-K., *Phys. Rev. C*, **51** (1995), 392 [crossref](#) [WEB OF SCIENCE™](#)
- [97] Fowler W., Caughlan G., Zimmerman B., *Annu. Rev. Astron. Astrophys.*, **5** (1967), 525 [crossref](#)
- [98] Angulo C. et al., *Nucl. Phys. A*, **656** (1999), 3 [crossref](#) [WEB OF SCIENCE™](#)
- [99] Geesaman D. F. et al., *Phys. Rev. C*, **15** (1977), 1835 [crossref](#)
- [100] Bochkarev O. V. et al., *Nucl. Phys. A*, **505** (1989), 215 [crossref](#) [WEB OF SCIENCE™](#)
- [101] Fomichev A. S. et al., *Phys. Lett. B*, **708** (2012), 6 [crossref](#) [WEB OF SCIENCE™](#)
- [102] Jager M. F. et al., *Phys. Rev. C*, **86** (2012), 011304(R) [crossref](#) [WEB OF SCIENCE™](#)
- [103] Wamers F. et al., *Phys. Rev. Lett.*, **112** (2014), 132502 [crossref](#) [WEB OF SCIENCE™](#)
- [104] Brown K. W. et al., *Phys. Rev. C*, **92** (2015), 034329 [crossref](#) [WEB OF SCIENCE™](#)
- [105] Shul'gina N. B. et al., *Phys. Rev. C*, **62** (2000), 014312 [crossref](#) [WEB OF SCIENCE™](#)
- [106] Grigorenko L. V., Timofeyuk N. K., Zhukov M. V., *Eur. Phys. J. A*, **19** (2004), 187 [crossref](#) [WEB OF SCIENCE™](#)
- [107] Grigorenko L. V., *Eur. Phys. J. A*, **20** (2004), 419 [crossref](#) [WEB OF SCIENCE™](#)
- [108] Sharov P. G., Egorova I. A., Grigorenko L. V., *Phys. Rev. C*, **90** (2014), 024610 [crossref](#) [WEB OF SCIENCE™](#)
- [109] Grigorenko L. V. et al., *Phys. Rev. C*, **86** (2012), 061602(R) [crossref](#) [WEB OF SCIENCE™](#)

- [110] Grigorenko L. V., Zhukov M. V., *Phys. Rev. C*, **91** (2015), 064617 [crossref](#) [WEB OF SCIENCE™](#)
- [111] Zaytsev S., Gasaneo G., *J. At. Mol. Sci.*, **4** (2013), 302
- [112] McCurdy C. W., Baertschy M., Rescigno T. N., *J. Phys. B*, **37** (2004), R137 [crossref](#) [WEB OF SCIENCE™](#)
- [113] Hilico L. et al., *Phys. Rev. A*, **66** (2002), 022101 [crossref](#) [WEB OF SCIENCE™](#)
- [114] Kilic S., Karr J.-P., Hilico L., *Phys. Rev. A*, **70** (2004), 042506 [crossref](#) [WEB OF SCIENCE™](#)
- [115] Madronero J. et al., *Math. Struct. Comput. Sci.*, **17** (2007), 225 [crossref](#) [WEB OF SCIENCE™](#)
- [116] Ambrosio M. J. et al., *Few-Body Syst.*, **55** (2014), 825 [crossref](#) [WEB OF SCIENCE™](#)
- [117] Thomas R. G., *Phys. Rev.*, **88** (1952), 1109 [crossref](#)
- [118] Ehrman J. B., *Phys. Rev.*, **81** (1951), 412 [crossref](#)
- [119] Comay E., Kelson I., Zidon A., *Phys. Lett. B*, **210** (1988), 31 [crossref](#) [WEB OF SCIENCE™](#)
- [120] Grigorenko L. V. et al., *Phys. Rev. Lett.*, **88** (2002), 042502 [crossref](#) [WEB OF SCIENCE™](#)
- [121] Grigorenko L. V., Golubkova T. A., Zhukov M. V., *Phys. Rev. C*, **91** (2015), 024325 [crossref](#) [WEB OF SCIENCE™](#)
- [122] Golovkov M. S. et al., *Phys. Lett. B*, **588** (2004), 163 [crossref](#) [WEB OF SCIENCE™](#)
- [123] Kohley Z. et al., *Phys. Rev. Lett.*, **110** (2013), 152501 [crossref](#) [WEB OF SCIENCE™](#)
- [124] Lunderberg E. et al., *Phys. Rev. Lett.*, **108** (2012), 142503 [crossref](#) [WEB OF SCIENCE™](#)
- [125] Caesar C. et al. (R3B Collab.), *Phys. Rev. C*, **88** (2013), 034313 [crossref](#) [WEB OF SCIENCE™](#)
- [126] Kondo Y. et al., *JPS Conf. Proc.*, **6** (2015), 010006
- [127] Grigorenko L. V., Mukha I. G., Zhukov M. V., *Phys. Rev. Lett.*, **111** (2013), 042501 [crossref](#) [WEB OF SCIENCE™](#)
- [128] *Phys. Part. Nucl. Lett.*, **7** (2010), 511 [crossref](#)
- [129] Efremov A. et al., *Rev. Sci. Instrum.*, **83** (2012), 02A334 [crossref](#) [WEB OF SCIENCE™](#)
- [130] Golovkov M. S. et al., *Exotic Nuclei, EXON-2014, Proc. of Intern. Symp. on Exotic Nuclei, Kaliningrad, Russia, 8 - 13 September 2014*, Yu. E. Penionzhkevich, Yu. G. Sobolev, World Scientific, Singapore, 2015, 171
- [131] Slepnev R. et al., *Instrum. Exp. Tech.*, **55** (2012), 645 [crossref](#) [WEB OF SCIENCE™](#)
- [132] Yamada K., Motobayashi T., Tanihata I., *Nucl. Phys. A*, **746** (2004), 156 [crossref](#) [WEB OF SCIENCE™](#)
- [133] Golovkov M. S. et al., *Phys. Rev. Lett.*, **93** (2004), 262501 [crossref](#) [WEB OF SCIENCE™](#)
- [134] Golovkov M. S. et al., *Phys. Rev. C*, **72** (2005), 064612 [crossref](#) [WEB OF SCIENCE™](#)
- [135] Golovkov M. S. et al., *Phys. Rev. C*, **76** (2007), 021605(R) [crossref](#) [WEB OF SCIENCE™](#)
- [136] Golovkov M. S. et al., *Phys. Lett. B*, **672** (2009), 22 [crossref](#) [WEB OF SCIENCE™](#)
- [137] Sidorchuk S. I. et al., *Phys. Rev. Lett.*, **108** (2012), 202502 [crossref](#) [WEB OF SCIENCE™](#)
- [138] Sidorchuk S. et al., *Phys. Lett. B*, **594** (2004), 54 [crossref](#) [WEB OF SCIENCE™](#)
- [139] Tilquin I. et al., *Nucl. Instrum. Meth. Phys. Res. A*, **365** (1995), 446 [crossref](#) [WEB OF SCIENCE™](#)
- [140] Slepnev R. et al., *Exotic Nuclei, EXON-2014, Proc. of Intern. Symp. on Exotic Nuclei, Kaliningrad, Russia, 8 - 13 September 2014*, Yu. E. Penionzhkevich, Yu. G. Sobolev, World Scientific, Singapore, 2015, 619
- [141] Mukha I. et al., 2013, GSI Scientific Report pHW-ENNA-EXP-45
- [142] Yukhimchuk A. et al., *Nucl. Instrum. Meth. Phys. Res. A*, **513** (2003), 439 [crossref](#) [WEB OF SCIENCE™](#)
- [143] Cwiok M. et al., *IEEE Trans. Nucl. Sci.*, **52** (2005), 2895 [crossref](#) [WEB OF SCIENCE™](#)
- [144] Miernik K. et al., *Nucl. Instrum. Meth. Phys. Res. A*, **581** (2007), 194 [crossref](#) [WEB OF SCIENCE™](#); *VCI 2007, Proc. of the 11th Intern. Vienna Conf. on Instrumentation*
- [145] Miernik K. et al., *Acta Phys. Pol. B*, **41** (2010), 449 [WEB OF SCIENCE™](#)
- [146] Miernik K. et al., *Phys. Rev. C*, **76** (2007), 041304(R) [crossref](#) [WEB OF SCIENCE™](#)
- [147] Pomorski M. et al., *Phys. Rev. C*, **90** (2014), 014311 [crossref](#) [WEB OF SCIENCE™](#)

- [148] Pfützner M. et al., *Phys. Rev. C*, **92** (2015), 014316 [crossref](#) [WEB OF SCIENCE™](#)
- [149] Lis A. A. et al., *Phys. Rev. C*, **91** (2015), 064309 [crossref](#) [WEB OF SCIENCE™](#)
- [150] Tanihata I., *J. Phys. G*, **22** (1996), 157 [crossref](#) [WEB OF SCIENCE™](#)
- [151] Smirnov Yu. F., Tchuvil'sky Yu. M., *Phys. Rev. C*, **15** (1977), 84 [crossref](#)
- [152] Nemets O. F. i dr., *Nuklonnye assotsiatsii v atomnykh yadrakh i yadernye reaktsii mnogonuklonnykh peredach*, Naukova dumka, Kiev, 1988
- [153] Werby M. F. et al., *Phys. Rev. C*, **8** (1973), 106 [crossref](#)
- [154] Schenk K. et al., *Phys. Lett. B*, **52** (1974), 36 [crossref](#)
- [155] Ter-Akopian G. et al., *Phys. Lett. B*, **426** (1998), 251 [crossref](#) [WEB OF SCIENCE™](#)
- [156] Bachelier D. et al., *Nucl. Phys. A*, **195** (1972), 361 [crossref](#)
- [157] Oganessian Yu. Ts., Zagrebaev V. I., Vaagen J. S., *Phys. Rev. Lett.*, **82** (1999), 4996 [crossref](#) [WEB OF SCIENCE™](#)
- [158] Wolski R. et al., *Phys. Lett. B*, **467** (1999), 8 [crossref](#) [WEB OF SCIENCE™](#)
- [159] Sidorchuk S. I. et al., *Nucl. Phys. A*, **840** (2010), 1 [crossref](#) [WEB OF SCIENCE™](#)
- [160] Seth K. K. et al., *Phys. Rev. Lett.*, **58** (1987), 1930 [crossref](#) [WEB OF SCIENCE™](#)
- [161] Bohlen H. et al., *Prog. Part. Nucl. Phys.*, **42** (1999), 17 [crossref](#) [WEB OF SCIENCE™](#)
- [162] Rogachev G. V. et al., *Phys. Rev. C*, **67** (2003), 041603(R) [crossref](#) [WEB OF SCIENCE™](#)
- [163] Chen L. et al., *Phys. Lett. B*, **505** (2001), 21 [crossref](#) [WEB OF SCIENCE™](#)
- [164] Volya A., Zelevinsky V., *Phys. Rev. C*, **74** (2006), 064314 [crossref](#) [WEB OF SCIENCE™](#)
- [165] Johansson H. T. et al., *Nucl. Phys. A*, **842** (2010), 15 [crossref](#) [WEB OF SCIENCE™](#)
- [166] Kalanee T. Al. et al., *Phys. Rev. C*, **88** (2013), 034301 [crossref](#) [WEB OF SCIENCE™](#)
- [167] Korshennikov A. A. et al., *Phys. Rev. Lett.*, **87** (2001), 092501 [crossref](#) [WEB OF SCIENCE™](#)
- [168] Golovkov M. et al., *Phys. Lett. B*, **566** (2003), 70 [crossref](#) [WEB OF SCIENCE™](#)
- [169] Meister M. et al., *Phys. Rev. Lett.*, **91** (2003), 162504 [crossref](#) [WEB OF SCIENCE™](#)
- [170] Gornov M. G. et al., *JETP Lett.*, **77** (2003), 344 [MathNet.Ru](#) [crossref](#) [WEB OF SCIENCE™](#)
- [171] Korshennikov A. et al., *Phys. Lett. B*, **326** (1994), 31 [crossref](#) [WEB OF SCIENCE™](#)
- [172] Ostrowski A. N. et al., *Phys. Lett. B*, **338** (1994), 13 [crossref](#) [WEB OF SCIENCE™](#)
- [173] Johansson H. T. et al., *Nucl. Phys. A*, **847** (2010), 66 [crossref](#) [WEB OF SCIENCE™](#)
- [174] Kohley Z. et al., *Phys. Rev. Lett.*, **109** (2012), 232501 [crossref](#) [WEB OF SCIENCE™](#)
- [175] Iwasaki H. et al., *Phys. Lett. B*, **491** (2000), 8 [crossref](#) [WEB OF SCIENCE™](#)
- [176] Papka P. et al., *Phys. Rev. C*, **81** (2010), 054308 [crossref](#) [WEB OF SCIENCE™](#)
- [177] Batty C. et al., *Nucl. Phys. A*, **120** (1968), 297 [crossref](#)
- [178] Bochkarev O. V. et al., *Sov. J. Nucl. Phys.*, **55** (1992), 955
- [179] Yang X. et al., *Phys. Rev. C*, **52** (1995), 2535 [crossref](#) [WEB OF SCIENCE™](#)
- [180] Nakayama S. et al., *Phys. Rev. Lett.*, **85** (2000), 262 [crossref](#) [WEB OF SCIENCE™](#)
- [181] Nakamura T., *Eur. Phys. J. A*, **13** (2002), 33 [WEB OF SCIENCE™](#)
- [182] Tilley D. et al., *Nucl. Phys. A*, **745** (2004), 155 [crossref](#) [WEB OF SCIENCE™](#)
- [183] Markenroth K. et al., *Nucl. Phys. A*, **679** (2001), 462 [crossref](#) [WEB OF SCIENCE™](#)
- [184] Meister M. et al., *Nucl. Phys. A*, **700** (2002), 3 [crossref](#) [WEB OF SCIENCE™](#)
- [185] *Part. Nucl. Lett.*, **6** (2009), 118 [crossref](#)
- [186] Korshennikov A. A. et al., *Phys. Rev. Lett.*, **90** (2003), 082501 [crossref](#) [WEB OF SCIENCE™](#)
- [187] Gurov Yu. B. et al., *Phys. Part. Nucl.*, **40** (2009), 558 [crossref](#) [WEB OF SCIENCE™](#)
- [188] Caamaño M. et al., *Phys. Rev. Lett.*, **99** (2007), 062502 [crossref](#) [WEB OF SCIENCE™](#)
- [189] Caamaño M. et al., *Phys. Rev. C*, **78** (2008), 044001 [crossref](#) [WEB OF SCIENCE™](#)
- [190] Nikolskii E. Yu. et al., *Phys. Rev. C*, **81** (2010), 064606 [crossref](#) [WEB OF SCIENCE™](#)
- [191] Danilin B. V. et al., *Phys. Rev. C*, **55** (1997), R577 [crossref](#) [WEB OF SCIENCE™](#)
- [192] Garrido E., Fedorov D. V., Jensen A. S., *Phys. Rev. C*, **69** (2004), 024002 [crossref](#) [WEB OF SCIENCE™](#)

- [193] Chromik M. J. et al., *Phys. Rev. C*, **55** (1997), 1676  
- [194] Chromik M. J. et al., *Phys. Rev. C*, **66** (2002), 024313  
- [195] Firestone R., *Nucl. Data Sheets*, **110** (2009), 1691  
- [196] *Sigmaphi*, <http://www.sigmaphi.fr/>
- [197] Beeckman W. et al., *Proc. of the 13th Intern. Conf. on Heavy Ion Accelerator Technology, HIAT2015, Yokohama, Japan, September 7 - 11, 2015*
- [198] Geissel H. et al., *Exotic Nuclei, EXON-2014, Proc. of Intern. Symp. on Exotic Nuclei, Kaliningrad, Russia, 8 - 13 September 2014*, Yu. E. Penionzhkevich, Yu. G. Sobolev, World Scientific, Singapore, 2015, 579
- [199] Mukha I. et al., *Phys. Rev. C*, **79** (2009), 061301(R)  
- [200] Mukha I. et al., *Phys. Rev. C*, **82** (2010), 054315  
- [201] Vries H. D., Jager C. D., Vries C. D., *At. Data Nucl. Data Tabl.*, **36** (1987), 495  
- [202] Hofstadter R., *Rev. Mod. Phys.*, **28** (1956), 214 
- [203] Savard G. et al., *Nucl. Instrum. Meth. Phys. Res. B*, **204** (2003), 582  
- [204] Plass W. et al., *Nucl. Instrum. Meth. Phys. Res. B*, **317** (2013), 457  
- [205] Bekhterev V. et al., *High Energy Phys. Nucl. Phys.*, **31** (2007), 23
- [206] Donets E. D., *Rev. Sci. Instrum.*, **69** (1998), 614  
- [207] Donets D. E. i dr., *Prikladnaya fizika*, 2010, no. 3, 34
- [208] Leitner D., *Nucl. Instrum. Meth. Phys. Res. B*, **317** (2013), 235  
- [209] Delahaye P., *Nucl. Instrum. Meth. Phys. Res. B*, **317** (2013), 389  
- [210] Budker G. I., Skrinkii A. N., *Sov. Phys. Usp.*, **21** (1978), 277  
- [211] Skrinky A. N., Parkhomchuk V. V., *Sov. J. Part. Nucl.*, **12** (1981), 223