

Prof. Dr. Livia Ludhova - Publications (full list)

Reviews

1. L. Ludhova: Experimental data on solar neutrinos, *Eur. Phys. J. A* 52 (2016) 82.
2. G. Bellini and L. Ludhova, Geoneutrinos, *Nuovo Cim. C037* (2014) 03, 57-63.
3. G. Bellini, L. Ludhova, G. Ranucci, and F.L. Villante: Neutrino Oscillations, Hindawi Publishing Corporation, *Advances in High Energy Physics*, Volume 2014 (2014) Article ID 191960, 28 pages.
4. L. Ludhova and S. Zavatarelli: Studying the Earth with Geo-neutrinos, Hindawi Publishing Corporation, *Advances in High Energy Physics*, Volume 2013 (2013) Article ID 425693, 16 pages.
5. G. Bellini, A. Ianni, L. Ludhova, F. Mantovani, and W.F. McDonough: Geoneutrinos, *Progr. Part. Nucl. Phys.* 73 (2013) 1–34.
6. K. N. Abazajian et al.: Light Sterile Neutrinos: A White Paper, arXivL1204.5379.

Borexino

1. M. Agostini et al. (Borexino Collaboration), Borexino's search for low-energy neutrino and antineutrino signals correlated with gamma-ray bursts, *Astrop. Phys.* 86 (2017) 11-17.
2. M. Agostini et al. (Borexino Collaboration): A test of electric charge conservation with Borexino. *Phys. Rev. Lett.* 115 (2015) 231802.
3. M. Agostini et al. (Borexino Collaboration): Spectroscopy of geoneutrinos from 2056 days of Borexino data. *Phys. Rev. D* 92 (2015) 031101.
4. G. Bellini et al. (Borexino Collaboration): Neutrinos from the primary proton–proton fusion process in the Sun, *Nature* 512 (2014) 383.
5. G. Bellini et al. (Borexino Collaboration): Final results of Borexino Phase-I on low energy solar neutrino spectroscopy, *Phys. Rev. D* 89 (2014) 112007.
6. G. Bellini et al. (Borexino Collaboration): New limits on heavy sterile neutrino mixing in ^8B -decay obtained with the Borexino detector, *Phys. Rev. D* 88 (2013) 072010.
7. G. Bellini et al. (Borexino collaboration): Cosmogenic Backgrounds in Borexino at 3800 m water-equivalent depth, *JCAP* 1308 (2013) 049.
8. G. Bellini et al. (Borexino collaboration): Measurement of geo-neutrinos from 1353 days of Borexino, *Phys. Lett. B* 722 (2013) 295-300.
9. G. Bellini et al. (Borexino collaboration): Lifetime measurements of ^{214}Po and ^{212}Po with CTF liquid scintillator detector at LNGS, *Eur. Phys. J. A* 49 (2013) 92.
10. G. Bellini et al. (Borexino collaboration): Absence of a day-night asymmetry in the ^7Be solar neutrino rate in Borexino, *Phys. Lett. B* 707 (2012) 22-26.
11. G. Bellini et al. (Borexino collaboration): First evidence of pep solar neutrinos by direct detection in Borexino, *Phys. Rev. Lett.* 108 (2012) 051302.
12. G. Bellini et al. (Borexino collaboration): Search for solar axions produced in the $p(d, ^3\text{He})\alpha$ reaction with Borexino detector. *Phys. Rev D* 85 (2012) 092003.
13. G. Bellini et al. (Borexino collaboration): Cosmic-muon flux and annual modulation in Borexino at 3800 m water-equivalent depth, *J. Cosmol. Astrop. Phys.* (2012) ISSN: 1475-7516, doi:10.1088/1475-7516/2012/05/015.
14. H. Back et al. (Borexino collaboration): Borexino calibrations: Hardware, Methods, and Results, *J. Instrum.* 7 (2012) P10018.
15. G. Bellini et al. (Borexino collaboration): Muon and Cosmogenic Neutron Detection in Borexino. *Journ. of Instrum* 6 (2011) P05005.

16. G. Bellini et al. (Borexino collaboration): Study of solar and other unknown anti-neutrino fluxes with Borexino at LNGS., Phys. Lett. B 696 (2011) 191-196.
17. G. Bellini et al. (Borexino collaboration): Precision measurement of the 0.862 MeV ${}^7\text{Be}$ solar neutrino interaction rate in Borexino, Phys. Rev. Lett. 107 (2011) 14130.
18. G. Bellini et al. (Borexino collaboration): New experimental limits on the Pauli forbidden transitions in ${}^{12}\text{C}$ nuclei obtained with 485 days Borexino data. Phys. Rev. C 81 (2010) 034317.
19. G. Bellini et al. (Borexino collaboration): Measurement of the solar ${}^8\text{B}$ neutrino rate with a liquid scintillator target and 3 MeV energy threshold in the Borexino detector. Phys. Rev. D 82 (2010) 033006.
20. G. Bellini et al. (Borexino collaboration): Observation of Geo-Neutrinos. Phys. Lett. B 687 (2010) 299-304.
21. G. Alimonti et al. (Borexino collaboration): The liquid handling systems for the Borexino solar neutrino detector, Nucl. Instrum. Methods Phys. Res. A. 609 (2009), 58–78.
22. G. Alimonti et al. (Borexino collaboration): The Borexino detector at the Laboratori Nazionali del Gran Sasso, Nucl. Instrum. Methods Phys. Res. A. 600 (2009), 568–593.
23. G. Bellini et al. (Borexino collaboration): Search for solar axions emitted in the M1-transition of ${}^7\text{Li}^*$ with Borexino CTF. Eur. Phys. J. C 54 (2008), 61–72.
24. C. Arpesella et al. (Borexino collaboration): First real time detection of ${}^7\text{Be}$ solar neutrinos by Borexino, Phys. Lett. B 658 (2008) 101-108.
25. H.O. Back et al. (Borexino collaboration): Pulse-shape discrimination with the Counting Test Facility, Nucl. Instrum. Methods Phys. Res. A. 584 (2008) 98–113.
26. C. Arpesella et al. (Borexino collaboration): Direct measurement of the ${}^7\text{Be}$ solar neutrino flux with 192 days of Borexino data, Phys. Rev. Lett. 101 (2008) 091302.

SOX

1. G. Bellini et al. (Borexino collaboration): SOX: Short distance neutrino Oscillations with BoreXino, JHEP 1308 (2013) 038.

JUNO

1. F. An et al (JUNO Collaboration): Neutrino physics with JUNO, J. Phys. G: Nucl. Part. Phys. 43 (2016) 030401 (188pp).
2. R. Han et al.: Potential of geo-neutrino measurements at JUNO. Chinese Physics C Vol. 40, No. 3 (2016) 033003.
3. T. Adam et al. (JUNO Collaboration): JUNO Conceptual Design Report, arXiv:1508.07166.

LENA

1. M. Wurm et al.: The next-generation liquid-scintillator neutrino observatory (LENA), Astrop. Phys. 35 (2012) 685-732.
2. M. Wurm et al.: Search for modulations of the solar Be-7 flux in the next-generation neutrino observatory LENA. Phys. Rev. D 83 (2011) 032010.

Exotic Atoms

3. R. Pohl et al. (The CREMA Collaboration), Laser spectroscopy of muonic

- deuterium, *Science* 353 (2016) 6300.
4. M. Diepold et al. (CREMA Collaboration): Lifetime and population of the 2S state in muonic hydrogen and deuterium, *Phys. Rev. A* 88 (2013) 042520.
 5. A. Antognini et al.: Proton Structure from the Measurement of 2S – 2P Transition Frequencies of Muonic Hydrogen, *Science* 339 (2013) 417-420.
 6. R. Pohl et al.: The size of the proton. *Nature* 466 (2010) 213.
 7. L. Ludhova et al.: Muonic hydrogen cascade time and lifetime of the shortlived 2S state, *Phys. Rev. A* 75 (2007) 040501(R).
 8. L.M.P. Fernandes et al., Characterization of large area avalanche photodiodes in X-ray and VUV-light detection, *Journ. of Instrum.* 2 (2007) P08005.
 9. T. Ishiwatari et al.: New analysis method for CCD X-ray data, *Nucl. Instrum.Methods Phys. Res A* 556 (2006) 509–515.
 10. G. Beer et al.: Measurement of the Kaonic Hydrogen X-Ray Spectrum, *Phys. Rev. Lett.* 94 (2005) 212302.
 11. L. Ludhova et al.: Planar LAAPDs: Temperature Dependence, Performance, and Application in Low Energy X-ray Spectroscopy, *Nucl. Instrum. Methods Phys. Res. A* 540 (2005) 169–179.
 12. T. Ishiwatari et al.: Kaonic nitrogen X-ray transition yields in a gaseous target, *Phys. Lett. B* 593 (2004) 48–54.
 13. M. Boucher et al.: Large Area APDs for low energy x-ray detection in intense magnetic fields, *Nucl. Instrum. Methods Phys. Res. A*, 505 (2003) 136–139.
 14. L.M.P. Fernandes et al.: Behaviour of Large–Area Avalanche Photodiodes under intense Magnetic Fields for VUV– Visible– and x–ray photon detection, *Nucl. Instrum. Methods Phys. Res. A* 498 (2003) 362-368.
 15. G. Beer et al.: A new method to obtain a precise value of the mass of the charged kaon, *Phys. Lett. B* 535 (2002) 52–58.

Other

1. G. Bellini and L. Ludhova: Eyeing the Earth with neutrinos, *Physics World* 25 (2012) 44-48.

Proceedings from conferences (as a speaker or as a convener):

1. L. Ludhova: Low-energy neutrinos, *Journal of Physics: Conference Series* 718 (2016) 022012.
2. L. Ludhova, “Neutrino Geoscience”, *Proceedings of the Magellan Workshop*, <http://dx.doi.org/10.3204/DESY-PROC-2016-05/7>.
3. D.A. Dwyer and L. Ludhova: Oscillation at low energies. *Nuclear and Particle Physics Proceedings* 265-266 (2015) 339-345.
4. L. Ludhova et al. (Borexino Collaboration): Geo-neutrinos and Borexino. *Phys. Part. Nucl.* 46 (2015) 174-181.
5. L. Ludhova et al. (Borexino Collaboration): Solar neutrino results with Borexino I, *PoS ICHEP2012* (2013) 392.
6. L. Ludhova et al. (Borexino Collaboration): Solar neutrino physics with Borexino I, arXiv:1205.2989, proceedings of Moriond 2012 EW Session Conference.
7. L. Ludhova et al. (Borexino Collaboration): 200 days of Borexino data, *Nucl. Phys. B – Proc. Suppl.* 188 (C) (2009) 90-95.

Geology:

1. M. Nemcok et al.: Tertiary development of the Polish and eastern Slovak parts of the Carpathian accretionary wedge: insights from balanced crosssections, *Geologica Carpathica* 57,5 (2006) 355–370.
2. M. Nemcok et al.: Reconstruction of Cretaceous rifts incorporated in the Outer West Carpathian wedge by balancing, *Marine and Petroleum Geology* 18 (2001) 39–64.
3. V. Hurai et al.: Nitrogen-bearing fluids, brines and carbonate liquids in Variscan migmatites of the Tatra Mountains, Western Carpathians - heritage of high-pressure metamorphism, *European Journal of Mineralogy* 12 (2000) 1283–1300
4. M. Nemcok et al.: Results of 2D balancing along 20 degrees and 21 degrees 30' longitude and pseudo-3D in the Smilno tectonic window: Implications for shortening mechanisms of the West Carpathian accretionary wedge, *Geologica Carpathica* 51, 5 (2000) 281–300.
5. L. Ludhova and M. Janak: Phase relations and P-T path of cordierite-bearing migmatites, Western Tatra Mountains, Western Carpathians, *Geol. Carp.* 50 (1999) 283-293.
6. L. Ludhova and M. Janak: Decompression and exhumation of Variscan orogenic root in the Tatra Mountains, Western Carpathians: Evidence from high-grade metapelites, *Geol. Carp.* 50 (1999) 120-122.
7. M. Janak *et al.*: Dehydration melting and devolatilization during exhumation of high-grade metapelites: the Tatra Mountains, Western Carpathians, *Journal of Metamorphic Geology* 17,4 (1999) 379–396.
8. M. Janak et al.: Partial melting and retrogression during exhumation of high-grade metapelites, the Tatra Mountains, Western Carpathians, *Physics and Chemistry of the Earth - Part A. Solid Earth and Geodesy* 17 (1999) 379–395.