

## Albert Varonov

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Bulgarian

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### Education

2016 – Present

**PhD student in Theoretical physics**  
[Sofia University “St. Kliment Ohridski”](#)

2011 – 2014

**M. A. of Space Research**  
[Sofia University “St. Kliment Ohridski”](#)  
ISCED 1997 level 5B, code 44

2000 – 2005

**B. A. of Computer Systems and Technologies**  
[Technical University of Sofia](#)  
ISCED 1997 level 4A, code 48

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### Academic Employment

February 2013 – June 2014

**Physicist** at University Center for Space Research  
and Technologies  
[Sofia University “St. Kliment Ohridski”](#)

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### Academic Activities

- Exercises instructor in Quantum mechanics for bachelor students for the academic 2016/2017 year.
  - Deputy chairman of Sofia Branch of Union of Physicists in Bulgaria since January 2017.
  - Chairman of the Astronomy circle at the University Center for Space Research and Technologies at Sofia University from fall semester 2012 until spring semester 2016.
  - Part of the [Bulgarian team](#) of the [JEM-EUSO experiment](#) for the academic 2012/2013 year.
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## Grants

- Two Astronomy circle projects approved for funding by University Student Council for the academic years 2012/2013 and 2013/2014.
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## Publications

1. A. Varonov, Y. Shopov, *On the Influence of Total Solar Irradiance on Global Land Temperature*, Comptes rendus de l'Académie bulgare des Sciences, **67**, 9 (2014).
  2. T. M. Mishonov, N. I. Zahariev, R. V. Topchiyska, B. V. Lazov, S. B. Mladenov, A. M. Varonov, *Heating of the solar corona by Alfvén waves - self-induced opacity*, [arxiv:1103.2233](https://arxiv.org/abs/1103.2233).
  3. T. M. Mishonov, A. M. Varonov, D. D. Maksimovski, S. G. Manolev, V. N. Gourev and V. G. Yordanov, *An undergraduate laboratory experiment for measuring  $\epsilon_0$ ,  $\mu_0$  and speed of light  $c$  with do-it-yourself catastrophe machines: electrostatic and magnetostatic pendula*, Eur. J. of Phys. **38**, 025203 (2017); [arxiv:1605.05218](https://arxiv.org/abs/1605.05218).
  4. T. M. Mishonov, V. G. Yordanov, A. M. Varonov, *Measurement of electron charge  $q_e$  and Boltzmann's constant  $k_B$  by a cheap do-it-yourself undergraduate experiment*, [arXiv:1703.05224](https://arxiv.org/abs/1703.05224).
  5. T. M. Mishonov, A. M. Varonov, *Determination of Boltzmann constant by equipartition theorem for capacitors*, [arxiv:1707.04482](https://arxiv.org/abs/1707.04482).
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## Conference Talks

1. A. Varonov, Y. Shopov, *Correlation between Total Solar Irradiance and Global Land Temperatures for the Last 120 Years*, in: 5th School and Workshop on Space Plasma Physics (Kiten, Bulgaria, August 24 – September 6, 2014), edited by I. Zhelyazkov and T. Mishonov, AIP Conf. Proc. **1714**, 040002 (2016).
  2. T. M. Mishonov, A. M. Varonov, *WKB Approach for the Solar Corona Heating and Launching of Solar Wind by Alfvén Waves – Concept of Self-Induced Opacity*, in: 3<sup>rd</sup> National Congress on Physical Sciences, Sofia, Bulgaria, Sep. 29 – Oct. 02, 2016.
  3. T. Mishonov, A. Varonov, N. Zahariev, R. Topchiyska, B. Lazov, S. Mladenov, *Magnetohydrodynamic calculation of the temperature and wind velocity profile of the solar transition region. Preliminary results*, in 13<sup>th</sup> National Congress on Theoretical and Applied Mechanics, Sofia, Bulgaria, Sep. 06 – 10, 2017.
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## Languages

- English – fluent, TOEFL iBT score 100 as of 31 Jan 2015.

- Spanish – basic level.
  - Russian – basic level.
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### Personal Skills

- LaTeX document preparation system.
  - Programming languages – C/C++, Fortran, Python, Perl.
  - Data processing software – Mathematica, Matlab, IDL.
  - Plotting software – Gnuplot.
  - Image processing – RawTherapee, GIMP, IRIS.
  - Office products – OpenOffice™, Microsoft Office™.
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### Additional Skills

- IT network and security administration.
  - IT server administration – Linux and Unix-based operating systems.
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### Business Employment

Various positions in IT network, security and server administration between 2005 and 2015.