Probing the properties of dark matter particles with astrophysical observations

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List of publications

[1] A. Garzilli, A. Magalich, T. Theuns, C. S. Frenk, C. Weniger, O. Ruchayskiy and A. Boyarsky, "The Lyman-α forest as a diagnostic of the nature of the dark matter," Mon. Not. Roy. Astron. Soc., 489, 3456, 2018.

[2] A. Boyarsky, A. Garzilli, A. Magalich, O. Ruchayskiy, "How warm is too warm? Towards robust Lyman-α forest bounds on warm dark matter," [*in preparation for publication*] 2019.

[3] A. Magalich, N. Sabti, A. Filimonova, "Primordial nucleosynthesis constraints on sterile neutrinos with masses above pion mass," [*in preparation for publication*] 2019.

[4] M. Ovchynnikov, V. Syvolap, A. Magalich, O. Ruchayskiy, A. Boyarsky, "BBNSLOW. Primordial nucleosynthesis bounds on new physics without numerical codes," [*in preparation for publication*] 2019.

[5] A. Martini, A. Lutov, V. Gemmetto, A. Magalich, A. Cardillo, A. Constantin, V. Palchykov, M. Khayati, P. Cudré-Mauroux, A. Boyarsky, O. Ruchayskiy, D. Garlaschelli, P. De Los Rios, and, K. Aberer, "ScienceWISE: Topic Modeling over Scientific Literature Networks," 2016, *arXiv e-prints* [1612.07636].

Curriculum vitæ

I was born in Kyiv, Ukraine, on the 7th of August 1992. I have received my primary education at the Gymnasium No. 191, and my secondary education at the Kyiv Natural-Scientific Lyceum No. 145.

After finishing high school, I entered the Physics Department of the Taras Shevchenko National University of Kyiv in 2009. I have obtained my bachelor's degree in 2013 and started the Master's program at the Lorentz Institute for Theoretical Physics in Leiden. My Master thesis was titled "Constraints on sterile neutrinos lifetime from primordial nucleosynthesis". After graduation, I started my PhD studies under the supervision of Dr. Alexey Boyarsky at the Lorentz Institute.

During my PhD studies, I was a teaching assistant for the courses "Classical electrodynamics", "Topics in Theoretical Physics", "Particle Physics in the Early Universe" and "Effective Field Theory". I have visited a number of schools and conferences in the Netherlands, Italy, Switzerland, and Japan, where I presented my work.

After finishing my PhD studies, I would like to continue my academic career and stay in the field of theoretical physics.

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