# Plan B for particle physics: finding long lived particles at CERN

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# List of publications

[1] S. Alekhin *et. al.*, A facility to Search for Hidden Particles at the CERN SPS: the SHiP physics case, *Rept. Prog. Phys.* **79** (2016), no. 12 124201 [arXiv:1504.04855]. Contributing author. [Chapter 1]

[2] **SHiP** Collaboration, M. Anelli *et. al.*, A facility to Search for Hidden Particles (SHiP) at the CERN SPS, [arXiv:1504.04956]. Contributing author. [Chapter 4]

[3] **SHiP** Collaboration, A. Akmete *et. al.*, The active muon shield in the SHiP experiment, *JINST* **12** (2017), no. 05 P05011 [arXiv:1703.03612]. [Chapter 4]

[4] K. Bondarenko, A. Boyarsky, D. Gorbunov and O. Ruchayskiy, Phenomenology of GeV-scale Heavy Neutral Leptons, *Submitted to JHEP* (2018) [arXiv:1805.08567]. [Chapter 3]

[5] K. Bondarenko, A. Boyarsky, T. Bringmann and A. Sokolenko, Constraining self-interacting dark matter with scaling laws of observed halo surface densities, *JCAP* **1804** (2018), no. 04 049 [arXiv:1712.06602]. [Chapter 1]

[6] A. Sokolenko, K. Bondarenko, T. Brinckmann, J. Zavala Franco, M. Vogelsberger, T. Bringmann and A. Boyarsky, Towards an improved model of self-interacting dark matter haloes, *Submitted to JCAP* (2018) [arXiv:1806.11539]. [Chapter 1]

[7] **SHiP** Collaboration, A. Akmete *et. al.*, Sensitivity of the SHiP experiment towards heavy neutral leptons, *On review by the collaboration. To appear* (2018). Leading author. [Chapter 5]

[8] **SHiP** Collaboration, A. Akmete *et. al.*, Sensitivity of the SHiP experiment towards scalar portal, *On review by the collaboration. To appear* (2018). Leading author. [Chapter 5]

[9] K. Bondarenko, A. Boyarsky, V. Gorkavenko, A. Seleznov and A. Sokolenko, Phenomenology of GeV-scale Higgs-like scalar, *to appear* (2018). [Chapter 2]

[10] K. Bondarenko, A. Boyarsky, M. Ovchynnikov and O. Ruchayskiy, Intensity frontier experiments in search for new physics: SHiP and MATHUSLA, *to appear* (2018). [Chapter 5]

[11] K. Bondarenko, I. Boiarska, A. Boyarsky, M. Ovchynnikov and O. Ruchayskiy, Light dark matter with scalar mediator at Intensity Frontier experiments, *to appear* (2018). [Chapter 6]

# Curriculum vitæ

I was born in Kiev, Ukraine, on the 25th of May 1990. I have received the primary education at the school No. 63, and the secondary education at the Lyceum No. 171 in Kiev, with specialization in mathematics. In my last year at school, I have participated in the $38^{\text{th}}$ International Physics Olympiad and won a bronze medal.

After finishing high school, I entered the Physics Department of the Kiev Taras Shevchenko University in 2007. I have graduated in 2014. My Master thesis was titled "Calculation of production and decay rates of sterile neutrinos in the experiment on SPS". After the graduation, I started my Ph.D. studies at the Lorentz Insitute for Theoretical Physics in Leiden, under the supervision of Dr. Alexey Boyarsky.

During my Ph.D. studies, I was a teaching assistant for the courses "Classical mechanics B", "Particle physics and the early Universe", "Origin of the Standard Model", "Effective Field Theory". I have become a member of the SHiP collaboration and did a number of studies related to SHiP sensitivities for different models of new physics. I have visited a number of schools and conferences in the Netherlands, Italy, Switzerland, and Germany, where my work was presented.

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

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