

Volodymyr Sergiovych Savchenko

April 14, 2022

<https://www.volodymyrsavchenko.com/cv.pdf>

EPFL SCITAS
ME B2 464 (Bâtiment ME)
Station 9
CH-1015 Lausanne

Phone: (+41) 21 693 19 41
Email: Volodymyr.Savchenko@epfl.ch
Homepage: <https://volodymyrsavchenko.com>
ORCID: <https://orcid.org/0000-0001-6353-0808>
GitHub: <https://github.com/volodymyrssh/>

Personal

Born on October 14, 1985 in Kyiv

Citizen of Ukraine.

Employment

| | |
|---------------------|--|
| 2022-02 - now (50%) | Data Scientist at EPFL, supporting CTA project activities. |
| 2017-01 - now | Post-doctoral researcher at ISDC , Departement of Astronomy, University of Geneva. Responsible for INTEGRAL in-flight calibration at ISDC. Leading the multimessenger follow-up activities with INTEGRAL. Deeply involved in developing innovative approaches for preservation and improved reusability of astrophysical data and software, primarily in cloud-native web-based data-analysis workflows. |
| 2013-12 - 2016-12 | Post-doctoral researcher, INTEGRAL/ISGRI instrument team member (team leader F. Lebrun, since 2016 - Ph. Laurent) , François Arago Centre, APC, Université Paris Diderot. Responsible for modelling response of hard X-ray detector ISGRI, made a major improvement solving long-standing problem in this area. Actively exploring Grid and cloud infrastructures for deploying flexible analysis frameworks and software preservation (Stratus-Lab, OpenStack at IN2P3 CC-Lyon). Involved in multimessenger studies, in particular playing leading role in INTEGRAL follow-up of gravitational wave events. |
| 2012-05 - 2012-12 | Post-doctoral researcher at ISDC data centre , Observatory of Geneva, Switzerland. In a brief several months between finishing PhD and starting post-doctoral position in Paris continued research started during PhD, stayed involved in INTEGRAL operations. |
| 2006-09 - 2007-12 | Engineer, Bogolyubov Institute for theoretical physics, Kiev, Ukraine. Actively involved in creation of ukrainian national Grid infrastructure, ukrainian contribution to the growing needs of high-energy physics experiments. Explored possibilities of Grid for astrophysical applications. At the same time worked on supporting and developing computing resources of Swiss-Ukrainian virtual observatory project. |

Education

- 2008-01 - 2012-04 Ph.D. *mention astronomie et astrophysique*, University of Geneva. Thesis "Gamma-ray bursts" (advisor Prof. Thierry Courvoisier, 2012-04-24) focused on observational and theoretical aspects of this puzzling astrophysical phenomenon. Research touched a variety of other topics: pulsars, dark matter, object classification. Took part in INTEGRAL spacecraft operations. Worked on improving of data reduction accuracy and on modelling instrument response to high energy particles : this work involved development of a complex data reduction workflow, which was then applied to a large diverse dataset (near 1M items) . Created web service for rapid distribution of the pre-reduced data . This service is still widely used by the community .
- 2002-09 - 2007-07 M.Sc. Particle and nuclear physics, Kiev Taras Shevchenko National University, including advanced courses and schools in theoretical, particle and astroparticle physics at Bogolyubov Institute for theoretical physics (Kiev) Took active part in establishment of a Swiss-Ukrainian virtual observatory project , lead technical aspects of it's deployment . In the frame of this project started research in astroparticle physics.

Experience

Languages

| | |
|--------------------|--------------------------|
| Ukrainian, Russian | native |
| English | professional proficiency |
| French | intermediate |

Student supervision

In 2015 I co-supervised an M1 student in Paris University, Michele Tsirou.
In 2016 I co-supervised an M2 student in Paris University, Anna de Marco.
In 2019 I co-supervised a Master student in University of Geneva, Tinnaneri Sreekanth Vilasini.
In 2021 I co-supervised a Master student in University of Geneva, Tutukhanim Balayeva

Collaboration management

I co-lead organization of a large collaboration of observations with INTEGRAL telescope. Organized multiple meetings, developed web site (including web-based data analysis services).

Meeting organization

In 2012-2014 I lead an effort to bootstrap a group of researchers from Paris region interested in the GRB science. As part of the process I organized regular meetings.

In 2014 the GRB Paris group organized a large workshop “Gamma-Ray Bursts in the Multi-messenger Era”¹.

In December 2015 I lead organization of “Distributed Computing in Astrophysics” workshop at APC/FACe”².

¹<https://indico.in2p3.fr/event/9603/>

²<http://www.apc.univ-paris7.fr/FACe/content/distributed-computing-astrophysics>

Computing

| | |
|--|--|
| Python, Bash, Latex, awk, sed | high proficiency. |
| HTML, JavaScript, C++, C, Lua, FORTRAN, IDL | considerable experience in reusing, debugging, updating existing software, as well as basic development |
| Ruby, Java, Go, Rust, Kotlin | basic experience reusing and developing simple applications |
| git, gitlab, github | use routinely, develop and maintain large CI/CD pipelines |
| Web service development | developed several service for distributing scientific data. |
| Public Cloud infrastructures | primarily used academic infrastructures (StratusLab, OpenStack at CNRS/IN2P3/CC-Lyon, UNIGE cloud), but also deployed smaller projects to Hetzner, DigitalOcean, AWS |
| On-premise cluster Kubernetes/RKE | provisioned, built, and support a Kubernetes cluster, used it for supporting service stack, widely used by the INTEGRAL collaboration and broader scientific community |
| Containers (Docker, Singularity) | in addition to developing and managing containerize workflows, distributed containers for use by the scientific community |
| ELK stack, fluentd, Sentry | deployed and maintained for logging and monitoring |
| Linux administration, ansible | in 2006-2008 was responsible for operation of servers for scientific projects. Currently maintain a bare metal Kubernetes cluster |
| Apache Kafka, SPARK | used for processing astrophysical alerts |
| Apache Fuseki | deployed and used for managing project knowledge base |
| HPC computing: Slurm, SGE | used for large scale runs |
| HEAsoft, Xspec and many specialised astrophysical instrument software packages | extensively used |
| ROOT, GEANT | followed "Formation de Geant4" at LAL in May 2014 |
| Redmine, Jira, Confluence, Github, Gitlab | use for AGILE project managment |

Awards

- 2017 Mikhail G. Revnivitsev Prize, by ESA/INTEGRAL, IKI and INAF.
- 2018 Zeldovich Medal, by COSPAR and RAS.

Publications

Selected Journal Articles

1. INTEGRAL Detection of the First Prompt Gamma-Ray Signal Coincident with the Gravitational-wave Event GW170817
Savchenko, V.; Ferrigno, C.; Kuulkers, E.; Bazzano, A.; Bozzo, E.; Brandt, S.; Chenevez, J.; Courvoisier, T. J.-L.; Diehl, R.; Domingo, A.; Hanlon, L.; Jourdain, E.; von Kienlin, A.; Laurent, P.; Lebrun, F.; Lutovinov, A.; Martin-Carrillo, A.; Mereghetti, S.; Natalucci, L.; Rodi, J.; Roques, J.-P.; Sunyaev, R.; Ubertini, P.
2017, ApJ 848L/15S
2. Gravitational Waves and Gamma-rays from a Binary Neutron Star Merger: GW170817 and GRB 170817A
LIGO Scientific Collaboration, Virgo Collaboration, Fermi Gamma-Ray Burst Monitor, INTEGRAL
2017, ApJ, 848L/13A
3. An online data analysis system of INTEGRAL telescope
A. Neronov; V. Savchenko; A. Tramacere, M. Meharga, C. Ferrigno, S. Paltani
2021, A&A, 651/A97
4. INTEGRAL Discovery of a Burst with Associated Radio Emission from the Magnetar SGR 1935+2154
Mereghetti, S.; Savchenko, V.; Ferrigno, C.; Götz, D.; Rigoselli, M.; Tiengo, A.; Bazzano, A.; Bozzo, E.; Coleiro, A.; Courvoisier, T. J. -L.; Doyle, M.; Goldwurm, A.; Hanlon, L.; Jourdain, E.; von Kienlin, A.; Lutovinov, A.; Martin-Carrillo, A.; Molokov, S.; Natalucci, L.; Onori, F. Panessa, F.; Rodi, J.; Rodriguez, J.; Sánchez-Fernández, C.; Sunyaev, R.; Ubertini, P.
2020, ApJL, 898/2, L29
5. Identification of a Local Sample of Gamma-Ray Bursts Consistent with a Magnetar Giant Flare Origin
Burns, E.; Svinkin, D.; Hurley, K.; Wadiasingh, Z.; Negro, M.; Younes, G.; Hamburg, R.; Ridnaia, A.; Cook, D.; Cenko, S. B.; Aloisi, R.; Ashton, G.; Baring, M.; Briggs, M. S.; Christensen, N.; Frederiks, D.; Goldstein, A.; Hui, C. M.; Kaplan, D. L.; Kasliwal, M. M. Kocevski, D.; Roberts, O. J.; Savchenko, V.; Tohuvavohu, A.; Veres, P.; Wilson-Hodge, C. A.
2021, ApJL 907/2, id.L28

Press releases

The paper “INTEGRAL Upper Limits on Gamma-Ray Emission Associated with the Gravitational Wave Event GW150914” was featured in *ESA press release on 30 March 2016*, as well as press releases of multiple other institutions, including UNIGE.

The paper “INTEGRAL Detection of the First Prompt Gamma-Ray Signal Coincident with the Gravitational-wave Event GW170817” was featured in *ESA press release on 16 October 2017* as well as press releases of multiple other institutions, including UNIGE..

The paper "INTEGRAL IBIS and SPI-ACS detection of a hard X-ray counterpart of the radio burst from SGR 1935+2154" was featured in [ESA press release on 16 October 2020](#).

As well as multiple other, more limited, media communications, most recently about our contribution to the paper "Identification of a Local Sample of Gamma-Ray Bursts Consistent with a Magnetar Giant Flare Origin" were [featured by UNIGE press office on 13 January 2021](#).

<https://www.isdc.unige.ch/~savchenk/cv.pdf>