

RNDr. Jiří Chudoba, Ph.D.

Senior Scientist

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PROFESSIONAL INTERESTS / RESEARCH EXPERTISE

I study properties of elementary particles since my master thesis. I performed searches for top quark in the master theses. My PhD theses described properties of W boson pair production in the LEP collider. Later I focused on software and computing in HEP. I prepared software for the LHC experiment ALICE during my postdoc years at CERN. I deal mostly with distributed computing for the ATLAS experiment since I moved to FZU. The experience with massive data processing I brought to the astroparticle experiment Pierre Auger Observatory. I also participate in grid computing for Cherenkov Telescope Array and BelleII projects.

I lead the team of the FZU Computing Center since its establishment in 2008. I was PI of four grants which dealt with distributed and high throughput computing. My current interest also focuses on open data in physics and implementation of EOSC in the Czech Republic.

EDUCATION

1993	Master's degree in Nuclear and Subnuclear Physics Charles University, Faculty of Mathematics and Physics
1998	PhD in Physics (Particle physics) Charles University, Faculty of Mathematics and Physics

CURRENT POSITIONS

since 2014	Senior scientist (permanent) Institute of Physics of the Czech Academy of Sciences (FZU), Czech Republic
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PREVIOUS POSITIONS

1998 - 2000	Assistant professor, Charles University, Prague
2000 - 2003	Postdoc, CERN, Geneva
2003 - 2014	Scientist, Institute of Physics of the Czech Academy of Sciences (FZU), Czech Republic

PUBLICATIONS

***h*-index of 197 according to Inspire HEP database, as of 1-Dec-2022**

I (co)authored a total of 1480 journal articles and conference proceedings, most of them are papers by the ATLAS Collaboration. 25 of them are contributions with less than 10 authors, one. My work has so far gained over 193.000 citations

Selected 5 most important articles:

- 1 Observation of a new particle in the search for the Standard Model Higgs boson with the ATLAS detector at the LHC, ATLAS Collaboration (Georges Aad (Freiburg U.) et al.), Jul 2012. 24 pp.Phys.Lett. B716 (2012) 1-29, 13809 citations

Curriculum Vitae

- 2 Observation of Higgs boson production in association with a top quark pair at the LHC with the ATLAS detector, ATLAS Collaboration (G. Aad (Freiburg U.) et al.), 2018, Phys.Lett.B 784 (2018) 173-191, 525 citations
- 3 Performance of missing transverse momentum reconstruction with the ATLAS detector using proton-proton collisions at $\sqrt{s}=13$ TeV (M. Aaboud et al.), Eur.Phys.J.C 78 (2018) 1, 515 citations
- 4 Observation of a Large-scale Anisotropy in the Arrival Directions of Cosmic Rays above 8×10^{18} eV, Pierre Auger Collaboration (A. Aab et al.), Science 357 (2017) 6537, 1266-1270, 334 citations
- 5 Evidence for light-by-light scattering in heavy-ion collisions with the ATLAS detector at the LHC, ATLAS Collaboration (M. Aaboud et al.), Nature Phys. 13 (2017) 9, 852-858, 275 citations

RESEARCH GRANTS

Since 2016, I acquired more than 1,3 million Euro on research grants.

Role	Amount	Timespan	Title	Grant name / Funder	Call scope
PI	650 kEuro	07/2020 – 06/2022	Investments for Data processing and Detector Testing for the CERN-CZ RI (CERN-CD)	OP Research, Development and Education	Czech
PI	680 kEuro	2017 - 2019	CERN Computing (CERN-C)	OP Research, Development and Education	Czech
PI	25 kEuro	09/2022 – 08/2023	Geographically distributed data storage	FR CESNET	Czech

INVITED TALKS AT INTERNATIONAL CONFERENCES

I have given over 12 invited talks of which 10 have been at international conferences and workshops. Since Jan 2016 highlights include:

Nov-2022	<i>keynote at 6th Users' Conference of IT4Innovations, Ostrava, Czech Republic</i>
Feb-2021	<i>DAQFEET 2021, Prague, Czech Republic (via zoom)</i>
Sep-2020	<i>20th Conference of Czech and Slovak Physicists, Prague, Czech Republic</i>
Jul-2018	<i>39th International Conference on High Energy Physics, Seoul, South Korea</i>
Dec-2017	<i>Digital Infrastructures for Research 2017, Brussels, Belgium</i>

PUBLIC OUTREACH

Since 2017 I have participated in project Open Science where I work with high school students on data processing in high energy and astroparticle physics. I participated in several events for public: Scientific fair, Open days, Science night. I gave several lectures for public like for Planetarium in Brno, University of the 3rd age, IT students annual meeting.

SUPERVISION OF GRADUATE STUDENTS and POSTDOCTORAL FELLOWS

PhD	2016	J. Schovancová: Measurement of the top quark properties, Charles University
MSc	2013	E. Rakovská: Study of Missing Energy in the Pierre Auger Observatory, Czech Technical University
MSc	2008	M. Burdík: Monitoring of servers in the computing grid, Charles University
MSc	2007	J. Pipek: The Measurement of Top Quark Mass in Proton-Proton Collisions in the ATLAS Detector, Charles University

ORGANIZATION OF INTERNATIONAL SCIENTIFIC MEETINGS

- 2024 International conference on High Energy Physics ICHEP2024, Prague, member of local organization committee
- 2023 LHCOPN-LHCONE meeting, Prague, head of local organizing committee
- 2020 International conference on High Energy Physics ICHEP2020, Prague, member of local organization committee
- 2018 DPM Workshop 2018, head of local organization
- 2016 9th International Workshop on Top Quark Physics TOP 2016, member of local organization committee
- 2015 EGI Community Forum, member of program committee
- 2014 16th International workshop on Advanced Computing and Analysis Techniques in physics research, member of program committee

INSTITUTIONAL RESPONSIBILITIES

- 2008 -- now Head of Computing Center of FZU
- 2014 -- now Head of Detector Development and Data Processing Department, FZU

COMMISSIONS OF TRUST AND SERVING SCIENTIFIC COMMUNITY

- ATLAS experiment member of International Computing Board since 2018
- WLCG Worldwide LHC Computing Grid, CZ representative since 2022
- IT4I National supercomputing center IT4I, member of Users' Board since 2021
- LRI CERN-CZ member of Executive Board of the Large Research Infrastructure CERN-CZ
- CAS Czech Academy of Sciences, member of IT advisory board since 2010