

Curriculum Vitae

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Personal Data:

Birth: 1979, Stará Ľubovňa, Slovakia
Citizenship: Slovak
Family: Married, two children

Education:

PhD. Nuclear and Subnuclear Physics, P.J.Šafárik University, Slovakia (2007)
Dissertation: Top quark mass measurement in dilepton channel (CDF experiment)
M.S. Physics, P.J.Šafárik University, Slovakia (2002)

Positions Held:

Scientist, Institute of Physics of the Czech Academy of Sciences (2014 – present)
Associated scientist, Institute of Physics of the Czech Academy of Sciences (2012 – 2013)
Post-doc, Institute of Physics of the Czech Academy of Sciences (2011)
Guest Scientist (International Fellowship), Fermi National Accelerator Laboratory (2008 – 2010)
Post-doc, Institute of Experimental Physics, Slovak Academy of Sciences (2008 – 2010)
Guest Scientist, Fermi National Accelerator Laboratory (2002 – 2004)

Professional Experience:

ATLAS experiment (2011 – present)

- Study of top quark
Charge asymmetry, spin correlations, differential cross-sections of boosted top quarks in top quark pair production.
- Study of soft quantum chromodynamics
Charged-particle multiplicity distributions and their sensitivity to the underlying event.
- Operations
Data quality, software review, distributed computing, Monte-Carlo generators.

CDF experiment (2002 – present)

- Study of top quark
 W boson helicity fractions from top quark decay, top quark mass measurements.

- Search for a Higgs boson
Search for a Higgs boson decaying to two W bosons, coordinator of production of Higgs group simulated samples
- Computing operations
Offline operations manager, data processing on computing cluster.

Awards:

- The best publication by young researcher (under 35) of Slovak Academy of Sciences (2008): 3rd place (section Physical, Space, Earth, and Engineering Sciences)
- The best result in basic research at Institute of Experimental physics, Slovak Academy of Sciences (2007)

Committees:

- 10th International Workshop on Top Quark Physics (TOP 2017)
Co-chair of International Advisory Committee.
- 9th International Workshop on Top Quark Physics (TOP 2016)
Member of Local Organizing Committee.

Students Supervision:

- advisor or co-advisor of 2 bachelor, 3 master, and 2 (1 in progress) PhD theses

Selected Publications:

- [1] ATLAS Collaboration, “Differential $t\bar{t}$ cross-section measurements using boosted top quarks in the all-hadronic final state with 139 fb^{-1} of ATLAS data,” arXiv:2205.02817 [hep-ex].
- [2] R. Lysák, “Charge Asymmetry in Top Quark Pair Production,” Symmetry **12** (2020) no.8, 1278
- [3] ATLAS Collaboration, “Measurements of $t\bar{t}$ differential cross-sections of highly boosted top quarks decaying to all-hadronic final states in pp collisions at $\sqrt{s} = 13 \text{ TeV}$ using the ATLAS detector,” Phys. Rev. **D98** (2018) no.1, 012003, arXiv:1801.02052 [hep-ex].
- [4] ATLAS Collaboration, “Measurement of charged-particle distributions sensitive to the underlying event in $\sqrt{s} = 13 \text{ TeV}$ proton-proton collisions with the ATLAS detector at the LHC,” JHEP **1703**, 157 (2017), arXiv:1701.05390 [hep-ex].
- [5] ATLAS Collaboration, “Charged-particle distributions in $\sqrt{s} = 13 \text{ TeV}$ pp interactions measured with the ATLAS detector at the LHC,” Phys. Lett. B **758**, 67 (2016), arXiv:1602.01633 [hep-ex].

- [6] ATLAS Collaboration, “Measurements of the charge asymmetry in top-quark pair production in the dilepton final state at $\sqrt{s} = 8$ TeV with the ATLAS detector,” *Phys. Rev.* **D94**, no. 3, 032006 (2016), arXiv:1604.05538 [hep-ex].
- [7] CDF Collaboration, “ W boson polarization measurement in the $t\bar{t}$ dilepton channel using the CDF II Detector,” *Phys. Lett. B* **722**, 48 (2013), arXiv:1205.0354 [hep-ex].
- [8] CDF and D0 Collaborations, “Combination of CDF and D0 measurements of the W boson helicity in top quark decays,” *Phys. Rev.* **D85**, 071106 (2012), arXiv:1202.5272 [hep-ex].
- [9] CDF and D0 Collaboration, “Combined Tevatron upper limit on $gg \rightarrow H \rightarrow W^+W^-$ and constraints on the Higgs boson mass in fourth-generation fermion models,” *Phys. Rev.* **D82**, 011102 (2010), arXiv:1005.3216 [hep-ex].
- [10] CDF Collaboration, “Inclusive Search for Standard Model Higgs Boson Production in the WW Decay Channel using the CDF II Detector,” *Phys. Rev. Lett.* **104**, 061803 (2010), arXiv:1001.4468 [hep-ex].
- [11] CDF Collaboration, “Cross-section constrained top quark mass measurement from dilepton events at the Tevatron,” *Phys. Rev. Lett.* **100**, 062005 (2008), arXiv:0710.4037 [hep-ex].
- [12] CDF Collaboration, “Measurement of the top quark mass using template methods on dilepton events in proton antiproton collisions at $\sqrt{s} = 1.96$ -TeV,” *Phys. Rev.* **D73**, 112006 (2006), arXiv:hep-ex/0602008.
- [13] J. Antos *et al.* [CDF - Run II Collaboration], “Data processing model for the CDF experiment,” *IEEE Trans. Nucl. Sci.* **53**, 2897 (2006), arXiv:physics/0606042.