Curriculum Vitae

Aleksei Dziuba

Name for publications: Alexey Dzyuba
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Date: 29th of April 1981

Higher Education: Department of Experimental Nuclear Physics, Physics and Mathematics Faculty, Saint-Petersburg State Polytechnical University (SPbSPU), 1998 – 2004.

BSc in Physics, *Application of LITRANI package for modeling the collection of light in scintillating crystals*, SPbSPU, 2002.

MSc in Physics of atomic nuclei and elementary particles, *Investigation of the $a_0^+(980)$-meson production in the reaction $pp \rightarrow da_0^+ \rightarrow dK^+(K^0\text{-bar})$ with T_p=2.83 GeV,* SPbSPU, 2004.

PhD student, High Energy Physics Department of Petersburg Nuclear Physics Institute (HEPD PNPI) and Experimentelle Hadronendynamik Institut für Kernphysik Forschungszentrum Jülich (IKP FZJ), 2004-2007.

PhD degree, *Close-to-threshold KKbar-pair production in nucleon-nucleon interactions*, Saint-Petersburg State University (SPbSU), 2009.

Employment:

Oct 07 — Jan 09	Junior researcher, HEPD PNPI
Jan 09 — Jan 12	Regular researcher, HEPD PNPI
Jan 12 — Now	Senior researcher, HEPD PNPI

Other Appointments:

Oct 03 — Jun 04	Visiting student, IKP FZJ
Oct 07 — Aug 11	Visiting researcher, IKP FZJ
Sep 11 — Now	Visiting researcher, CERN
Jan 17 — Now	Convener of Production and Decay Properties subgroup of Charm physics working group of LHCb experiment

Career Resumé

Aleksei Dziuba

I was an undergraduate in Department of Experimental Nuclear Physics, Physics and Mathematics Faculty SPbSPU from 1998 to 2002. In 2001-2002 I was performing Monte-Carlo studies on light collection in scintillating crystals, which naturally became a topic of my bachelor thesis.

In 2003 I was invited to join the group of Vladimir Koptev (HEPD PNPI) which were involved to the ANKE experiment at accelerator COSY (IKP FZJ). The scientific interest of the group was K^+ meson production in hadron-induced reactions. The subject of my thesis was "*Close-to-threshold KKbar-pair production in nucleon-nucleon interactions*". I performed data analysis, which allows to determine *KKbar* production cross sections in *pp*, *pn*, *pd* and *dd* collisions. These studies allowed to determine degree of OZI-rule violation by measurement $pp\to pp\varphi$ and $pn\to d\varphi$ reactions, measure scalar-isovector contribution to $pp\to dK^+K^0bar$ and investigate pK^-, dK^0bar, dK^0bar, ppK^- as well as K^+K^- rescattering in the final state. The dissertation has been defended in SPbSU in 2009. I

In 2011 I joined PNPI LHCb group headed by Alexey Vorobyov. I was involved to several physics analysis including: studies of gluon distribution at low-*x* *via* measurement of double *BBbar* production (postponed for higher statistics dataset), pentaquark searches, production and decays of baryons, pentaquark searches. Not-exhaustive list of important publications is presented below:

1. ANKE Collaboration, A.A. Dzyuba et al, Scalar-isovector *KKbar* production close to threshold, Eur. Phys. J. A29 (2006) 245.
2. ANKE Collaboration, Y.Maeda, ... , A.A. Dzyuba et al., Precision measurement of the quasi-free $pn\to d\varphi$ reaction close to threshold, Phys. Rev. Lett. 97 (2006) 142301.
3. ANKE Collaboration, Y.Maeda, ... , A.A. Dzyuba et al., Kaon-pair production in proton-proton collisions, Phys. Rev. C 77 (2008) 015204.
4. ANKE Collaboration, A.A. Dzyuba et al, Interpretation of *KKbar* pair production in pp collisions, Eur. Phys. J. A38 (2008) 1.
5. A.A. Dzyuba et al, Coupled-channel effects in the $pp\to ppK^+K^-$ reaction, Phys. Lett. B 668 (2008) 315.
6. ANKE Collaboration, Y.Maeda, ... , A.A. Dzyuba et al., Measurement of the $pn\to dK^+K^-$ total cross section close to threshold, Phys. Rev. C 79 (2009) 018201.
7. ANKE Collaboration, X. Yuan, ... , A.A. Dzyuba et al., Measurement of the isospin-filtering $dd\to{}^4\mathrm{He}K^+K^-$ reaction at Q=39 MeV, Eur. Phys. J. A 42 (2009) 1.
8. ANKE Collaboration, A.Polyanskiy, … , A.A. Dzyuba et al., Measurement of the in-medium φ-meson width in proton-nucleus collisions, Phys. Lett. B 696 (2011) 23.
9. ANKE Collaboration, M. Hartmann, …, A.A. Dzyuba et al., Momentum dependence of the φ-meson nuclear transparency, Phys. Rev C 85, 2012, 035206.
10. ANKE Collaboration, Q.J. Ye, …, A.A. Dzyuba et al, The production of K^+K^- pairs in proton-proton collisions below φ-meson threshold, Phys. Rev. C 87, 2013, 065203.
11. LHCb Collaboration, R. Aaij, …, A.A. Dzyuba et al, Observation of J/ψp resonances consistent with pentaquark states in $\Lambda_b^0\to J/\psi K^-p$ decays, Phys. Rev. Lett. 115 (2015) 072001
12. LHCb Collaboration, R. Aaij, …, A.A. Dzyuba et al, Determination of the quark coupling strength |Vub| using baryonic decays, Nature Physics 11 (2015) 743
13. LHCb Collaboration, R. Aaij, …, A.A. Dzyuba et al, Observation of two new Ξ_b^- baryon resonances, Phys. Rev. Lett. 114 (2015) 062004
14. LHCb Collaboration, R. Aaij, …, A.A. Dzyuba et al, Observation of the rare $B_s^0\to\mu^+\mu^-$ decay from the combined analysis of CMS and LHCb data, Nature 522 (2015) 68
15. LHCb Collaboration, R.Aaij,..., A.Dzyuba et al. "Measurements of prompt charm production cross-sections in pp collisions at $\sqrt{s}$=13 TeV", Journal of High Energy Physics 03, 159 (2016).