

ALEXEY A PETROV

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PROFESSIONAL EXPERIENCE

- 2001 - present Assistant (2001), Associate (2006), Full (2011) Professor
Wayne State University, Detroit, Michigan
- 2002 - present Associate Member, Michigan Center for Theoretical Physics
University of Michigan, Ann Arbor, Michigan
- 2000 - 2001 Postdoctoral Research Associate
Cornell University, Ithaca, New York
- 1997 - 2000 Postdoctoral Research Fellow
Johns Hopkins University, Baltimore, Maryland

EDUCATION

- 1995-1997 University of Massachusetts, Amherst (Ph.D. in Physics)
- 1993-1994 University of Massachusetts, Amherst (M.S. in Physics)
- 1988-1994 St. Petersburg (Poly)Technical University, Russia
Diploma (Nuclear Physics), *Summa Cum Laude*

ACADEMIC AND SCIENTIFIC HONORS

National or International

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| Fellow | 2015, American Physical Society |
| Comenius Professorship | 2015-16, Siegen University (Germany) |
| Intensity Frontier Fellowship | 2014-15, Fermi National Accelerator Lab |
| FNAL Visiting Scholar Award | 2014, Universities Research Association |
| Certificate of Reviewing Excellency | 2012, Physics Letters (Elsevier) |
| NSF CAREER Award | 2005, U.S. National Science Foundation |
| Frontier Science Golden Conference Award | 2002, INFN Frascati (Italy) |

University

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| Richard J Barber Faculty Award | 2016 & 2010, WSU Department of Physics |
| Board of Governors Faculty Recognition Award | 2010, Wayne State University |
| Career Development Chair Award | 2008-09, Wayne State University |
| Campus Life Leadership Award | 2007, Wayne State University |
| Outstanding Junior Faculty Award | 2006, WSU Academy of Scholars |

Excellence in Teaching Award	2004, WSU College of Science
University Research Grant Award	2001, Wayne State University
University Council/Lenin Fellowship	1990-93, St. Petersburg Tech. University

RESEARCH INTERESTS

THEORETICAL PARTICLE PHYSICS: effective field theories, physics of flavor, heavy quark physics, neutrino and lepton physics, Higgs physics, CP-violation

THEORETICAL ASTROPHYSICS: dark matter, primordial black holes

ONLINE TEACHING AND LEARNING: project “*Virtual Physics Instructor*,”
<http://www.physics.wayne.edu/~vpi/>

PROFESSIONAL TRAINING

1996	SLAC Summer Institute
1995	Theoretical Advanced Study Institute (TASI), U of Colorado

RECENT PROFESSIONAL ACTIVITIES

Editor	“ <i>Advances in High Energy Physics</i> ” (ISSN: 1687-7357)
Editor	“ <i>Central European Journal of Physics</i> ” (ISSN 1644-3608) (until 2013)

Conference organization

Internat. Advisory Committee	<i>The 8th International Workshop on Charm Physics</i> (CHARM 2016), Bologna, Italy
Local Organizing Committee	<i>The 2016 International Cosmology Conference</i> (COSMO 2016), Ann Arbor, MI
Chair, Organizing Committee	<i>The 7th International Workshop on Charm Physics</i> (CHARM 2015), Detroit, MI
Internat. Advisory Committee	<i>The 6th International Workshop on Charm Physics</i> (CHARM 2013), Manchester, UK
Program Committee	<i>2011 Meeting of the Division of Particles and Fields of APS</i> (DPF-2011), Providence, RI
Chair, Organizing Committee	<i>2010 Amherst Phenomenology Workshop</i> Amherst, MA 2010
Chair, Organizing Committee	<i>2009 Meeting of the Division of Particles and Fields of APS</i> (DPF-2009), Detroit, MI

Convener	<i>Beyond the Standard Model / Super-B factory</i> topical group Quarkonium Working Group, 2007-present
Convener	<i>“D, K, and tau” parallel session.</i> 2006 Meeting of the Division of Particles and Fields, American Physical Society, Honolulu, Hawaii, 2006
Organizing Committee	<i>1st Meeting of the APS Topical Group on Hadronic Physics</i> Fermilab, Batavia, Illinois, 2004
Convener	<i>Charm inputs to CKM physics</i> working group Workshop on the CKM Unitarity Triangle, Durham, UK, 2003
Convener	<i>Charm quark parallel session</i> 2000 Meeting of the Division of Particles and Fields, Columbus
Convener	<i>Hadronic B Meson Decays</i> working group BaBar Physics Workshops, 1997-1998

Other activities

Member	<i>Intensity Frontier Fellowship Committee</i> Fermilab 2016-18
Theory Coordinator	<i>Charm Working Group</i> Belle II-Theory Interface Platform, KEK (Japan) 2014-16
External Thesis Examiner	<i>Department of Physics</i> , University of Toronto, 2015
Task Force Leader	<i>Charm Quark Task Force, DOE Intensity Frontier</i> US HEP Community Summer Study (Snowmass), 2013
Member	<i>Program Committee</i> APS Topical Group on Hadronic Physics, 2002-2006
Member	<i>CESR Tau-Charm Factory</i> Task Force Cornell University, 2000
Referee	Phys. Rev. Letters, Physical Review D, Eur. Phys. J. C, J. of Physics G, Phys. Letters B, J. of High Energy Physics
Proposal reviewer	U.S. Department of Energy, U.S. National Science Foundation Research Corporation (USA), NSERC (Canada), Swiss National Science Foundation
Member	DOE Office of Science <i>site visit panels</i> Northwestern U. (2007), Purdue U. (2008), U of Arizona (2009)
Member	NSF Division of Astronomical Sciences <i>grant review panels</i> NSF Division of Physics <i>grant review panels</i>

UNIVERSITY ADMINISTRATIVE SERVICE (selected recent appointments)

I have extensive experience of productive administrative work with both faculty from Physics and other Colleges and Departments, as well as with the University administration.

University and College-level Committee Chairmanship and Membership

1. **Chair, Research Committee of the WSU Academic Senate (2015-17).** As a Chair of the Academic Senate's Research Committee, I directed the work of the committee of WSU faculty from four different colleges to assess and improve WSU research enterprise. Advised Academic Senate and Vice President for Research of the findings. Researched and delivered several presentations on the status of WSU's international research and reputation rankings.
2. **WSU Center and Institute Advisory Committee (2016-19).** This committee, headed by the Vice President for Research, performs review of activities of the University-level research centers. I conducted site visits and recommended rechartering of Center for Molecular Medicine and Genetics (my main responsibility) and other research institutes.
3. **WSU Academic Senate (2012-18).** Twice elected from the College of Liberal Arts and Sciences for a three year term.
4. **Strategic Plan Committee of WSU College of Liberal Arts and Sciences (2014-16).** This multi-departmental committee, headed by the Dean of College of Liberal Arts and Sciences, set strategic goals and objectives for the College in the next five years. As a member of this committee, I performed assessment of strengths and weaknesses of the College's research program.
5. **Undergraduate Instructional Building Committee (2013).** This committee, headed by the Associate Vice President for the Facilities Planning and Management, drafted a proposal for the Science Instructional Building, which emphasized large high tech classrooms for active learning approaches to science teaching. I spearheaded writing of the proposal that was endorsed by WSU administration.
6. **College of Liberal Arts and Sciences' Undergraduate Research Fair Committee (2013).** I proposed the creation of this committee and actively participated in its activities. The exercise resulted in establishment of Annual Undergraduate Research Fair aimed at increasing participation of undergraduate students in research.

Department-level Committees***Chairmanship***

1. **Physics-Engineering AGRADE program (2015).** I proposed and then lead the creation of the Physics-Electrical Engineering Accelerated Graduate Enrollment (AGRADE) program. This AGRADE program enables highly qualified Physics seniors to enroll simultaneously in Physics undergraduate and Engineering graduate programs to complete both B.S. in Physics and M.S. in Electrical Engineering in five years.

2. **Research Funding Committee (2014)**. I proposed and then chaired the committee of senior faculty aimed at increasing the rate of successful external funding of applications from junior faculty in the Department of Physics and Astronomy. I created and run mock NSF reviews for faculty's grant proposals. Four Assistant Professors took part in the program, one of them (biophysics) received an NSF CAREER award in the following year.
3. **Undergraduate Recruitment and Retention Committee (2012-16)**. As a Chair, I introduced data-driven and goal-oriented approach to recruitment of new undergraduate physics, astronomy and biomedical physics majors, increasing the number of entering students by a factor of two. Our approach was replicated and implemented by the WSU Office of Enrollment Management for Fall 2014 admissions.
4. **Graduate Recruitment Committee (2008-10)**. As a Chair, I introduced data-driven and goal-oriented approach to graduate student recruitment.
5. **Program Director for the Research Experience for Undergraduates (REU) program at WSU (2008-18)**. I revitalized failing REU program at WSU. Under my leadership the program re-acquired funding and has been continuously funded by the external NSF grant for nine years. It attracts students from leading US Universities for a ten week research program at WSU.
6. **Particle Theory Faculty Search Committee (2010-11)**. I oversaw a successful hiring of Prof. Gil Paz to the faculty of the Department of Physics and Astronomy.
7. **Faculty advisor for the Society of Physics Students (SPS) (2001-11)**. I revitalized activities of failing SPS. At the end of my appointment, SPS has tripled its membership. It now runs a well-regarded regional annual physics workshop conference for undergraduate students and helps with daily activities for WSU physics majors. I was awarded a "Campus Leadership Award" for my work with WSU SPS.

Membership

1. **Executive Committee (2010-2014, 2016-18)**. Elected three times by Physics and Astronomy faculty in the last ten years for two-year terms. Advised Department Chair on general facets of the Department affairs.
2. **Faculty Search Committees (2010-11)**. I participated in successful hirings of Prof. Ed Cackett (observational astronomy) and Prof. Abhijit Majumder (nuclear theory) to the faculty of the Department of Physics and Astronomy.
3. **Strategic Plan Development Committee (2009-10 and 2014-16)**. Appointed by the Chair to develop the assessment of strengths and weaknesses of the Department of Physics and Astronomy and set the goals for its five-year development. Recommendations included balanced faculty hiring plan that strengthens the Department's research and educational missions and promotes gender equality, equal opportunities, and diversity, plan of research and educational infrastructure upgrades, and measures to improve graduate and undergraduate teaching.

EXTERNAL FUNDING

Note: currently active grants are denoted in **bold face**.

Title: “Particle Physics Research Program”, Task-B (Theory)

Task P.I.: Alexey A. Petrov

Source: US Department of Energy (current: DE-SC0007983)

Total Operating Budget for Task-B [4/15-3/18]: \$510,000 (50% for Petrov)

Total Operating Budget for Task-B [5/12-4/15]: \$345,000 (100% for Petrov)

Total Operating Budget for Task-B [3/09-3/12]: \$258,000 (100% for Petrov)

Total Operating Budget for Task-B [3/06-3/09]: \$253,000 (100% for Petrov)

Total Operating Budget for Task-B [3/03-3/06]: \$98,000 (100% for Petrov)

Title: “REU Site: Research Experience for Undergraduates in Astrophysics, Nuclear and Particle Physics”,

Grant P.I.: A. A. Petrov, co-P.I.: D. Cinabro

Source: National Science Foundation (PHY-1460853, 02/15-01/18)

Total Award Amount: \$291,232 (50% for Petrov)

Source: National Science Foundation (PHY-1156651, 02/12-01/16)

Total Award Amount: \$322,080 (50% for Petrov)

Source: National Science Foundation (PHY-0851678, 01/09-12/12)

Total Award Amount: \$287,291 (50% for Petrov)

Title: “CAREER: An Integrated Research and Education Program in Physics of Heavy Hadrons”,

Grant P.I.: Alexey A. Petrov

Source: National Science Foundation (PHY-0547794, 3/06-2/11)

Total Award Amount: \$400,000 (100% for Petrov)

Title: “Request for Funding Support of the 2009 DPF Meeting at Wayne State University; Detroit, Michigan; July 26-31,2009”,

Grant P.I.: A. A. Petrov, co-P.I.: P. Karchin

Source: National Science Foundation (PHY-0855436, 6/09-6/10)

Total Award Amount: \$10,000

Title: “Request for Funding Support of the 2009 DPF Meeting at Wayne State University; Detroit, Michigan; July 26-31, 2009”,

Grant P.I.: P. Karchin, co-P.I.: A. A. Petrov

Source: US Department of Energy

Total Award Amount: \$45,000

Title: “REU Site for Undergraduate Research in Accelerator, Nuclear and Particle Physics”,

Grant P.I.: G. Bonvicini, co-P.I.: D. Cinabro, S. Gavin, A. A. Petrov, C. Pruneau

Source: National Science Foundation (PHY-0353994, 1/04-12/07)

Total Award Amount: \$397,533 (20% for Petrov)

Title: “Research Program in Theoretical Particle Physics”,
 Grant P.I.: Alexey A. Petrov
 Source: National Science Foundation (PHY-0244853, 8/03-8/06)
 Total Award Amount: \$60,000 (100% for Petrov)

RECENT COMPETITIVE INTERNAL SUPPORT

Title: “Supplemental support for a Postdoctoral Research Associate”,
 Grant P.I.: Alexey A. Petrov
 Source: Office of Vice-President for Research, Wayne State University
Total Award Amount [6/16-6/18]: \$60,000
 Total Award Amount [6/12-6/14]: \$60,000
 Total Award Amount [6/09-6/11]: \$60,000

Title: “Theoretical issues in LHC physics”
 Grant P.I.: Alexey A. Petrov
 Source: Faculty Competition for Graduate Research Assistants (9/12-8/13)
 Total Award Amount: \$19,646 + fringes

TEACHING EXPERIENCE

Graduate Courses: Quantum Field Theory I/II, Particle Physics, Relativistic Quantum Mechanics/Special Topics, Quantum Mechanics I/II, Methods of Theoretical Physics II.

Undergraduate Courses: Methods of Theoretical Physics I, General Physics I/II

SUPERVISION OF STUDENTS AND POSTDOCS

Five students received Ph.D. and two students received Masters under my supervision. I am currently supervising three graduate students and one postdoctoral fellow. I am also a Program Director and PI of the Research Experience for Undergraduates (REU) site at WSU. **Note:** student/postdoc position after graduation is noted in brackets

Ph.D.	2008	Mohammad AlFiky [Lecturer, Ain Shams U. (Egypt)]
	2010	Andriy Badin [Postdoc, Duke U.]
	2011	Gagik Yeghyan [Asst. Prof., Grand Valley State U.]
	2013	Kristopher Healey [Postdoc, U. of Turin (Italy)]
	2014	Y. G. Aditya [Lecturer, Rochester Institute of Technology]
	2017	Derek Hazard (expected)
	2019	Renaë Conlin, Cody Grant (expected)
MA/MS	2002	Mingshan Sun
	2009	Marouane Salhi

Postdoc	2016-now	Bhubanjyoti (Bhujyo) Bhattacharya
	2012-14	Dmitry Zhuridov [Faculty, U. of Silesia (Poland)]
	2009-12	Andrew Blechman [Faculty, Roeper Schools]
	2007-08	Cosimo Bambi [Postdoc, IPMU, Tokyo U. (Japan)]
	2003-06	Fabrizio Gabbiani [Industry]
	2002-04	Andrey Onishchenko [Postdoc, Hamburg U. (Germany)]

PUBLIC PRESENTATION AS AN EXPERT IN DISCIPLINE

- “Higgs and the Puzzle of Missing Matter in the Universe.”
public lecture “Science Under the Dome,” November 12, 2015
- “What is happening at Japan’s Fukushima Nuclear Power Station?”
interview, 101.9 WDET radio station, April 14, 2011
public lecture “Science Under the Dome,” April 15, 2011

RESEARCH PUBLICATIONS

Note: in theoretical high energy physics order of author lists is traditionally **alphabetical**.
Below: * denotes papers with 50+ citations, ** denotes papers with 100+ citations, *** denotes papers with 250+ citations, **** denotes papers with 500+ citations, and ***** denotes papers with 1000+ citations. Total number of citations is 6,250+. My h-index is 36 (inSPIRE) or 37 (Google Scholar).

Invited review articles

1. *Implications of LHCb measurements and future prospects* **
 R. Aaij, ..., A. A. Petrov, *et al.* [LHCb Collaboration+theorists],
 Eur. Phys. J. **C73**, 2373 (2013), e-print Archive: arXiv:1208.3355 [hep-ex]
2. *Hadronic D and D_s meson decays*,
 A. Ryd and A. A. Petrov,
 Rev. Mod. Phys. **84**, 65 (2012), e-print Archive: arXiv:0910.1265 [hep-ph]
3. *Heavy quarkonium: progress, puzzles, and opportunities* *****
 N. Brambilla, ..., A. A. Petrov, *et al*
 Eur. Phys. J. **C71**, 1534 (2011), e-print Archive: arXiv:1010.5827 [hep-ph]
4. *Charm meson decays* *
 M. Artuso, B. Meadows, A. A. Petrov,
 Ann. Rev. Nucl. Part. Sci. **58**, 249 (2008), e-print Archive: arXiv:0802.2934 [hep-ph]
5. *The potential for neutrino physics at muon colliders and dedicated high current muon storage rings*
 I. Bigi, T. Bolton, J. Formaggio, D. Harris, J. Morfin, P. Spentzouris, J. Yu, B. Kayser, B.J. King, K. McFarland, Alexey A. Petrov, H. Schellman, M. Velasco, R. Shrock
 Phys. Rept. **371**, 151-230, 2002 e-print Archive: hep-ph/0106177

Research papers

1. *Lepton flavor violating quarkonium decays*
 D. E. Hazard and A. A. Petrov,
 Phys. Rev. D **94**, 074023 (2016), e-print Archive: arXiv:1607.00815 [hep-ph]
2. *Direct probes of flavor-changing neutral currents in e^+e^- collisions*
 A. Khodjamirian, T. Mannel and A. A. Petrov,
 JHEP 11 (2015) 142, e-print Archive: arXiv:1509.07123 [hep-ph]
3. *The role of low-energy observables in precision Higgs analysis*
 A. A. Petrov, S. Pokorski, J. D. Wells, Z. Zhang
 Phys. Rev. D **91**, 073001 (2015) 7, e-print Archive: arXiv:1501.02803 [hep-ph]
4. *D^\pm production asymmetry at the LHC from heavy-quark recombination*
 W. K. Lai, A. K. Leibovich, A. A. Petrov
 Phys. Rev. D **90**, 054022 (2014) 5, e-print Archive: arXiv:1408.2843 [hep-ph]

5. *Searching for dark matter at LHC with Mono-Higgs production*
A. A. Petrov, W. Shepherd
Phys. Lett. B **730**, 178 (2014), e-print Archive: arXiv:1311.1511 [hep-ph]
6. *Lepton flavor-violating transitions in effective field theory and gluonic operators*
A. A. Petrov, D. Zhuridov
Phys. Rev. D **89**, 033005 (2014), e-print Archive: arXiv:1308.6561 [hep-ph]
7. *Nonstandard neutrino interactions and transition magnetic moments*
K. J. Healey, A. A. Petrov, D. Zhuridov
Phys. Rev. D **87**, 117301 (2013), e-print Archive: arXiv:1305.0584 [hep-ph]
8. *Faking $B_s \rightarrow \mu^+ \mu^-$,*
Y. G. Aditya, K. J. Healey, A. A. Petrov
Phys. Rev. D **87**, 074028 (2013), e-print Archive: arXiv:1212.4166 [hep-ph]
9. *Searching for super-WIMPs in leptonic heavy meson decays,*
Y. G. Aditya, K. J. Healey, A. A. Petrov
Phys. Lett. B **710**, 118 (2012), e-print Archive: arXiv:1201.1007 [hep-ph]
10. *Relating B_s Mixing and $B_s \rightarrow \mu^+ \mu^-$ with New Physics,*
E. Golowich, J. Hewett, S. Pakvasa, A. A. Petrov, G. Yeghiyan
Phys. Rev. D **83**, 114017 (2011), e-print Archive: arXiv:1102.0009 [hep-ph]
11. *The flavor puzzle in multi-Higgs models,*
A. E. Blechman, A. A. Petrov, G. Yeghiyan
JHEP 11 (2010) 075, e-print Archive: arXiv:1009.1612 [hep-ph]
12. *Searching for light Dark Matter in heavy meson decays,*
A. Badin and A. A. Petrov,
Phys. Rev. D **82**, 034005 (2010), e-print Archive: arXiv:1005.1277 [hep-ph]
13. *Initial determination of the spins of the gluino and squarks at LHC,*
G. L. Kane, A. A. Petrov, J. Shao, L.-T. Wang,
J. Phys. **G37**, 045004 (2010), e-print Archive: arXiv:0805.1397 [hep-ph]
14. *Relating $D^0 - \bar{D}^0$ mixing and $D^0 \rightarrow \ell^+ \ell^-$ with New Physics **
E. Golowich, J. Hewett, S. Pakvasa and A. A. Petrov,
Phys. Rev. D **79**, 114030 (2009), e-print Archive: arXiv:0903.2830 [hep-ph]
15. *Black holes as antimatter factories,*
C. Bambi, A. D. Dolgov, and A. A. Petrov,
JCAP 0909:013, 2009, e-print Archive: arXiv:0806.3440 [astro-ph]
16. *Primordial black holes and the observed Galactic 511 keV line,*
C. Bambi, A. D. Dolgov, and A. A. Petrov,
Phys. Lett. B **670**, 174 (2008), e-print Archive: arXiv:0801.2786 [astro-ph]

17. *Lifetime difference in $D^0 - \bar{D}^0$ mixing within R-parity-violating SUSY*,
A. A. Petrov and G. K. Yeghiyan,
Phys. Rev. D **77**, 034018 (2008), e-print Archive: arXiv:0710.4939 [hep-ph]
18. *Lifetime difference in B_s mixing: Standard Model and beyond*,
A. Badin, F. Gabbiani, and A. A. Petrov,
Phys. Lett. B **653**, 230 (2007), e-print Archive: arXiv:0707.0294 [hep-ph]
19. *Implications of $D^0 - \bar{D}^0$ mixing for New Physics ***
E. Golowich, J. Hewett, S. Pakvasa and A. A. Petrov,
Phys. Rev. D **76**, 095009 (2007), e-print Archive: arXiv:0705.3650 [hep-ph]
20. *New Physics contributions to the lifetime difference in $D^0 - \bar{D}^0$ Mixing **
E. Golowich, S. Pakvasa, and A. A. Petrov,
Phys. Rev. Lett. **98**, 181801 (2007), e-print Archive: hep-ph/0610039
21. *Neutrinos in a left-right model with a horizontal symmetry*
K. Kiers, M. Assis, D. Simons, A. A. Petrov, and A. Soni,
Phys. Rev. D **73**, 033009 (2006), e-print Archive: hep-ph/0510274
22. *$X(3872)$: Hadronic molecules in effective field theory ***
M. T. AlFiky, F. Gabbiani and A. A. Petrov,
Phys. Lett. B **640**, 238 (2006), e-print Archive: hep-ph/0506141
23. *Short Distance Analysis of $D^0 - \bar{D}^0$ Mixing*
E. Golowich and A. A. Petrov,
Phys. Lett. B **625**, 53 (2005), e-print Archive: hep-ph/0506185
24. *Higgs sector of the left-right model with explicit CP violation*
K. Kiers, M. Assis and A. A. Petrov,
Phys. Rev. D **71**, 115015 (2005), e-print Archive: hep-ph/0503115
25. *Spectator effects and lifetimes of heavy hadrons ***
F. Gabbiani, A. I. Onishchenko and A. A. Petrov
Phys. Rev. D **70**, 094031 (2004), e-print Archive: hep-ph/0407004
26. *Hunting for CP violation with untagged charm decays*
A. A. Petrov
Phys. Rev. D **69**, 111901(R) (2004), e-print Archive: hep-ph/0403030
27. *The $D^0 - \bar{D}^0$ mass difference from a dispersion relation ***
A. F. Falk, Y. Grossman, Z. Ligeti, Y. Nir and A. A. Petrov,
Phys. Rev. D **69**, 114021 (2004), e-print Archive: hep-ph/0402204
28. *Comment on the new $D_s^{(*)+} \pi^0$ resonances ***
T. E. Browder, S. Pakvasa, A. A. Petrov
Phys. Lett. B **578**, 365 (2004), e-print Archive: hep-ph/0307054

29. $B^0 - \bar{B}^0$ mixing beyond factorization in QCD sum rules
J. G. Korner, A. I. Onishchenko, A. A. Petrov, A. A. Pivovarov
Phys. Rev. Lett. **91**, 192002 (2003), e-print Archive: hep-ph/0306032
30. Λ_b lifetime puzzle in heavy-quark expansion *
F. Gabbiani, A. I. Onishchenko, A. A. Petrov,
Phys. Rev. D **68**, 114006 (2003), e-print Archive: hep-ph/0303235
31. Lifetime differences in heavy mesons with time independent measurements
D. Atwood, A. A. Petrov
Phys. Rev. D **71**, 054032 (2005), e-print Archive: hep-ph/0207165
32. $SU(3)$ breaking and $D^0 - \bar{D}^0$ mixing **
A. F. Falk, Y. Grossman, Z. Ligeti, A. A. Petrov
Phys. Rev. D **65**, 054034 (2002), e-print Archive: hep-ph/0110317
33. Comments on color suppressed hadronic B decays *
M. Neubert, A. A. Petrov
Phys. Lett. B **519**, 50 (2001), e-print Archive: hep-ph/0108103
34. Two-loop renormalization of heavy-light currents at order $1/m_Q$ in the heavy-quark expansion
T. Becher, M. Neubert, A. A. Petrov
Nucl. Phys. B **611**, 367 (2001), e-print Archive: hep-ph/0012183
35. Effects from the charm scale in $K^+ \rightarrow \pi^+ \nu \bar{\nu}$ *
Adam F. Falk, Adam Lewandowski, Alexey A. Petrov
Phys. Lett. B **505**, 107 (2001), e-print Archive: hep-ph/0012099
36. Lessons from CLEO and FOCUS measurements of $D^0 - \bar{D}^0$ mixing parameters **
S. Bergmann, Y. Grossman, Z. Ligeti, Y. Nir, A. A. Petrov
Phys. Lett. B **486**, 418 (2000), e-print Archive: hep-ph/0005181
37. Measuring γ cleanly with CP-tagged B_s and B_d decays
A. F. Falk, A. A. Petrov
Phys. Rev. Lett **85**, 252 (2000), e-print Archive: hep-ph/0003321
38. Strong phases and $D^0 - \bar{D}^0$ mixing parameters *
A. F. Falk, Y. Nir, A. A. Petrov
JHEP **9912**, 019 (1999), e-print Archive: hep-ph/9911369
39. Phenomenology of V_{ub} from ratios of inclusive B decay rates
J. Chay, A. F. Falk, M. Luke, A. A. Petrov
Phys. Rev. D **61**, 034020 (2000), e-print Archive: hep-ph/9907363

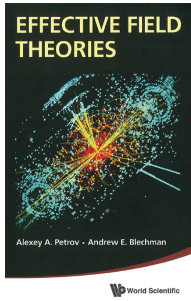
40. *Charmonium production at neutrino factories*
A. A. Petrov, T. Torma
Phys. Rev. D60, 093009 (1999), e-print Archive: hep-ph/9906254
41. *Measuring V_{ub} in inclusive B decays to charm*
A. F. Falk, A. A. Petrov
Phys. Rev. D61, 033003 (2000), e-print Archive: hep-ph/9903518
42. *Radiative leptonic B_c decays in effective field theory*
G. Chiladze, A. F. Falk, A. A. Petrov
Phys. Rev. D60, 034011 (1999), e-print Archive: hep-ph/9811405
43. *Hybrid charmonium production in B decays*
G. Chiladze, A. F. Falk, A. A. Petrov
Phys. Rev. D58, 034013 (1998), e-print Archive: hep-ph/9804248
44. *Can nearby resonances enhance $D^0 - \bar{D}^0$ mixing? **
E. Golowich, A. A. Petrov
Phys. Lett. B427, 172 (1998), e-print Archive: hep-ph/9802291
45. *Intrinsic charm of light mesons and CP violation in the heavy quark decay*
A. A. Petrov
Phys. Rev. D58, 054004 (1998), e-print Archive: hep-ph/9712497
46. *Final state interactions and New Physics in $B \rightarrow \pi K$ decays ***
A. F. Falk, A. L. Kagan, Y. Nir, A. A. Petrov
Phys. Rev. D57, 4290 (1998), e-print Archive: hep-ph/9712225
47. *Theory and phenomenology of non-leptonic B meson decay*
A. A. Petrov
Ph. D. Dissertation (University of Massachusetts)
48. *η' production in B -decays: Standard Model vs. New Physics ***
A. L. Kagan, A. A. Petrov
e-print Archive: hep-ph/9707354
49. *Dipenguin contribution to $D^0 - \bar{D}^0$ mixing **
A. A. Petrov
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50. *How to trap a non-standard penguin? Isospin symmetry violations in B -decays with enhanced chromomagnetic dipole operator*
A. A. Petrov
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51. *Factorization in non-leptonic heavy meson decays*
J. F. Donoghue, A. A. Petrov
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52. *Final state rescattering as a contribution to $B \rightarrow \rho\gamma$*
J. F. Donoghue, E. Golowich, A. A. Petrov
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53. *Systematics of soft final state interactions in B decay* **
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54. *Is $B \rightarrow X_s\gamma$ equal to $b \rightarrow s\gamma$? Spectator contributions to rare inclusive B decays*
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NOTES AND REPORTS

1. *SuperB Progress Reports – Physics* ***
B. O’Leary, ..., A. A. Petrov, ... *et al.*, arXiv:1008.1541 [hep-ex]
2. *Flavor Physics in the Quark Sector* ***
M. Antonelli, ..., A. A. Petrov, ... *et al.*,
Phys. Rept. 494, 197, (2010), arXiv:0907.5386 [hep-ph]
3. *Renaissance of the 1-TeV Fixed-Target Program*
T. Adams, ..., A. A. Petrov, ... *et al.*, Int. J. Mod. Phys. **A25**, 777, (2010)
4. *B , D and K decays* **
M. Artuso, ..., A. A. Petrov, ... *et al.*, Eur. Phys. J. **C57**, 309-492, (2008),
e-Print: arXiv:0801.1833 [hep-ph]
5. *SuperB: A High-Luminosity Asymmetric e^+e^- Super Flavor Factory (CDR)* ****
M. Bona, ..., A. A. Petrov, ... *et al.*, arXiv:0709.0451 [hep-ex]
6. *The Discovery potential of a Super B Factory* **
J. Hewett, ..., A. A. Petrov, ... *et al.*, e-Print: hep-ph/0503261
7. *Monte-Carlo event generator of inclusive electron-nucleon scattering*
P. V. Degtyarenko, A. A. Petrov
CLAS-NOTE 94-022 (Jefferson Lab internal note), Nov 1994.

TEXTBOOKS



“Effective field theories,”

Alexey A. Petrov and Andrew E. Blechman,
Hardcover, 320 pages, *World Scientific Publishing Company*,
ISBN-10: 9814434922, ISBN-13: 978-9814434928.

<http://www.worldscientific.com/worldscibooks/10.1142/8619>

EDITED PROCEEDINGS AND BOOK CHAPTERS

1. “Proceedings of the 2009 Meeting of the Division of Particles and Fields of the American Physical Society (DPF 2009),” Detroit, Michigan, 2009,
edited by Paul E. Karchin and Alexey A Petrov,
eConf C090726 (2009).
2. “The first meeting of the APS Topical Group on Hadronic Physics,”
edited by: Ted Barnes, Steve Godfrey, Alexey A Petrov and Eric Swanson
J. Phys.: Conf. Ser. 9 (2005), 1-330
3. “Hadronic B Meson Decays” (with I. Bigi, P. Rankin, R. Waldi, and D. Wyler) in *The BaBar Physics Book*, SLAC, 1998.

INVITED CONFERENCE PRESENTATIONS

1. *Constraints on New Physics from charm mixing and rare decays*
16th International Conference on B-Physics at Frontier Machines (BEAUTY-2016),
(Marseille, France; 2-6 May 2016) (plenary) [arXiv:1609.04448 [hep-ph]].
2. *Flavor physics in the LHC era*
APS April meeting (Salt Lake City, UT, USA; 16-19 April 2016)
3. *Low-energy observables and precision Higgs analyses*
Symposium on Effective Field Theories and Lattice Gauge Theory (Munich, Germany;
18-22 May 2016) (plenary)
The 4th MCTP Spring Symposium (Ann Arbor, MI, USA; 20-22 April 2015) (plenary)
4. *CP-violation in charm*
The XI International Conference on Hyperons, Charm and Beauty
Hadrons (BEACH 2014) (Birmingham, UK, 2014) (plenary);
50 years of CP violation (QMUL, London, UK; 2014) (plenary)

5. *Perspectives in flavor physics*
LoopFest XIII: Radiative corrections for the LHC and Future Colliders
(New York City, 18-20 June 2014) (plenary)
6. *Charm physics: past, present and future*
Fifth Workshop on Theory, Phenomenology and Experiments in Flavour Physics
(Capri, Italy, 23-25 May 2014) (plenary)
7. *Flavor physics in the LHC era*
The 2014 Phenomenology Symposium (Pittsburgh, PA, 5-7 May 2014) (plenary)
8. *Long-distance effects in charm mixing*
6th International Workshop on Charm Physics (Manchester, UK, 2013)
arXiv:1312.5304 [hep-ph] (plenary).
9. *Perspectives in charm physics (theory)*
Intensity Frontier Workshop (Argonne National Lab, 25-27 April 2013)
10. *Theory Summary (new physics with heavy flavors)*
Chicago 2012 Workshop on LHC Physics, (Chicago, IL, USA, November 2012)
11. *Theory of rare D decays,*
7th International Workshop on the CKM Unitarity Triangle (CKM-2012)
Cincinnati, OH, USA September 2012
12. *Long-distance effects in charm mixing & Rare B_s decays and B_s -mixing*
Workshop "Implications of LHCb measurements and future prospects,"
CERN, Switzerland, November 2011
13. *Charm physics*
Workshop "Colour meets flavour,"
Siegen, Germany, October 2011
14. *CP-violation in charm*
WE-Heraeus-Seminar on "Physics at LHCb"
Physikzentrum Bad Honnef, Germany, April 2011.
CKM-2010 Warwick, UK, 09/2010 [arXiv:1101.3822 [hep-ph]].
15. *Theoretical Status of Charm*
12th International Conference on B-Physics at Hadron Machines (BEAUTY-2009),
Heidelberg, Germany, September 2009 (plenary) [arXiv:1003.0906 [hep-ph]].
"Lattice Meets Phenomenology"
Durham, UK, September 2010 (plenary).
16. *Searching for New Physics with charm*
Progress and Challenges in Flavour Physics (Primosten09)
Primosten, Croatia, September 2009 (plenary)

- International Workshop on Tau-Charm Physics (CHARM-2009)
Leimen, Germany, May 2009 (plenary)
17. *Charm Physics (Theory)*
CERN Theory Institute *Flavour as a Window to New Physics at the LHC*,
CERN, Geneva, May 2008 (plenary)
 18. *New Physics in charm mixing*
7th Workshop on Continuous Advances in QCD, Minneapolis, May 2008
 19. *Implications of charm mixing for New Physics*
Anticipating Physics at the LHC workshop, KITP, UC Santa Barbara, CA, May 2008
 20. *Constraining New Physics from $D^0 - \bar{D}^0$ mixing*
XLIIIrd *Rencontres de MORIOND*, Electroweak Session,
La Thuile, May 2008 (plenary), [arXiv:0806.2498 [hep-ph]]
 21. *Final state interactions in B-decays*
The 2nd meeting of the APS Topical Group on Hadronic Physics
Nashville, TN, October 2006, (plenary)
Published in J.Phys.Conf.Ser.69:012010,2007
 22. *Physics of charm: mixing and CP-violation*
ITEP Meeting on the Future of Heavy Flavour Physics
Moscow, Russia, July 2006 (plenary)
 23. *Charm mixing beyond the Standard Model*
International Workshop on Tau-Charm Physics (CHARM-2006)
Beijing, China, June 2006, Int. J. Mod. Phys. A21 (2006) 5686 (plenary)
 24. *Heavy Meson Molecules in Effective Field Theory*
7th Workshop on Continuous Advances in QCD, Minneapolis, 2006 [hep-ph/0609215]
 25. *Charm physics and CP violation*
6th International Conference on Hyperons, Charm and Beauty Hadrons
Published in Nucl. Phys. Proc. Suppl. 142: 333-339, 2005
Chicago, IL, July 2004, [hep-ph/0409130] (plenary)
 26. *Lifetimes of heavy hadrons*
6th Workshop on Continuous Advances in QCD, Minneapolis, May 2004
[hep-ph/0408093]
 27. *Charm physics: Theoretical review*
Flavor Physics and CP Violation (FPCP 2003), Paris, France, 3-6 Jun 2003
[hep-ph/0311371] (plenary)

28. *Charm phenomenology for CKM parameters*
2nd Workshop on the CKM Unitarity Triangle, Durham, England, 5-9 Apr 2003
eConf **C0304052**, WG506 (2003) [hep-ph/0307322] (plenary)
29. *$D^0 - \bar{D}^0$ mixing, CP violation and New Physics*
Published in AIP Conf. Proc. 698: 456-460, 2004
Conference on Intersections of Particle and Nuclear Physics, New York City, 2003
30. *Flavor $SU(3)$ and mixing in charmed mesons.*
5th Workshop on Continuous Advances in QCD, Minneapolis, 2002
[hep-ph/0209049] (plenary)
31. *Theory of $D^0 - \bar{D}^0$ mixing.*
Flavor Physics and CP Violation, Philadelphia, 2002 [hep-ph/0207212] (plenary)
32. *$SU(3)$ breaking and $D^0 - \bar{D}^0$ mixing.*
Workshop on CP Violation, Ann Arbor, 2001
33. *Phenomenology of $D^0 - \bar{D}^0$ mixing.*
Frontiers in Contemporary Physics II, Nashville, 2001 (plenary)
34. *Phenomenology of $D^0 - \bar{D}^0$ mixing or what do we expect now?*
Workshop on Prospects for CLEO/CESR at $3 < E < 5$ GeV, Ithaca, 2001
35. *Width difference in the $D^0 - \bar{D}^0$ system.*
4th Workshop on Continuous Advances in QCD, Minneapolis, 2000 [hep-ph/0009160]
36. *Physics potential of neutrino factories at Muon Colliders: short baseline.*
Physics Potential and Development of $\mu^+\mu^-$ Colliders, San Francisco, 1999,
[hep-ph/0003026] (plenary)
37. *Final state interactions: from strangeness to beauty.*
The Chicago Conference on Kaon Physics, Chicago, 1999 [hep-ph/9909312] (plenary)
38. *QCD and electroweak studies at neutrino factories.*
23 Johns Hopkins Workshop on Current Problems in Particle Theory, Baltimore, 1999
39. *Determination of V_{ub} from inclusive $b \rightarrow u\bar{c}s$ decays.*
 B physics at the Tevatron, FNAL, 1999
40. *Rescattering effects in heavy quark decays.*
DPF-99 meeting of the American Physical Society, Los Angeles, 1999
[hep-ph/9903366] (review)
41. *Enhancing $D^0 - \bar{D}^0$ mixing: from Standard Model to New Physics.*
Workshop on Physics with the 8+ Photons at Jefferson Lab, Pittsburgh, 1998

OTHER CONFERENCE PRESENTATIONS

1. *Role of low-energy observables in precision Higgs analyses*
Direct probes of flavor-changing neutral current in e^+e^- collisions
 International Conference on High Energy Physics (ICHEP 2016), Chicago, IL 2016
2. *Lifetimes of Heavy Hadrons*
 International Conference on High Energy Physics (ICHEP 2006), Moscow, Russia 2006
3. *$X(3872)$ in effective field theory*
 PANIC 2005 Conference, Santa Fe, 2005
4. *Lifetimes of heavy hadrons*
 Phenomenology'05 Symposium, Madison, 2005
5. *$D^0 - \bar{D}^0$ mixing from a dispersion relation*
 Phenomenology'04 Symposium, Madison, 2004
6. *$SU(3)$ breaking and $D^0 - \bar{D}^0$ mixing.*
 Phenomenology'02 Symposium, Madison, 2002
7. *Measuring V_{ub} in B decays to charm.*
 Phenomenology'99 Symposium, Madison, 1999
8. *B_c decays in non-relativistic QCD.*
 APS Centennial Meeting (Atlanta, 1999).
9. *CP violation in charm decays.*
 DPF-99 meeting of the American Physical Society, Los Angeles, 1999
10. *Hybrid charmonium production in NRQCD*
 3rd International Conference on Quark Confinement and Hadron Spectrum, Jefferson Lab, 1998, [hep-ph/9808347]
11. *Final state interactions and new physics in $B \rightarrow \pi K$ decays.*
 Phenomenology'98 Symposium, Madison, 1998
12. *Long distance effects in radiative $B \rightarrow \rho\gamma$ decay.*
 BaBar Physics Workshop, Princeton, 1997
13. *Dipenguin-like contributions to $D^0 - \bar{D}^0$ mixing*
 Seventh International Conference on Hadron Spectroscopy, BNL, 1997 [hep-ph/9712279]

PARTICIPATION IN OTHER CONFERENCES

1. Beyond the Standard Model Workshop
 (MCTP, University of Michigan, Ann Arbor, 10-12 October 2016)
2. Indirect Searches for New Physics in the LHC and Flavour Precision Era;
 Anticipating 14 TeV: Insight into Matter from the LHC and Beyond
 (Munich Institute for Particle and Astroparticle Physics, 06-07/2015)
3. BSM Higgs Workshop
 (LHC Physics Center, Fermilab, 2014)

4. Causality, Analyticity, and Superluminal Propagation Workshop (MCTP, Univ. of Michigan, 2008)
5. LHC Signatures Workshop (MCTP, Univ. of Michigan, 2008) [session chair]
6. Top Quark Symposium (MCTP, Univ. of Michigan, 2005) [session chair]
7. New Ideas in Particle Physics and Cosmology (Philadelphia, 1999)
8. Heavy Quarks at Fixed Target (Fermilab, 1998) [poster presented]
9. Chiral Dynamics Workshop (MIT, 1994).

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