

Matthew R. Shepherd

Curriculum Vitae

Contact Information

Department of Physics
Indiana University
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Professional Preparation

2005 Ph.D., Experimental Particle Physics, Cornell University
2003 M.S., Physics, Cornell University
2000 B.S., Physics with High Distinction, Indiana University
2000 B.S., Mathematics with Honors and High Distinction, Indiana University

Appointments

2016 - Professor, Indiana University
2011 - 2016 Associate Professor, Indiana University
2005 - 2011 Assistant Professor, Indiana University
2001 - 2005 Graduate Research Assistant, Cornell University
Fall 2001 Teaching Assistant, Cornell University
Fall 2000 Teaching Assistant, Cornell University
1997 - 2000 Undergraduate Research Assistant, Indiana University
Summer 1999 Summer Research Assistant, CERN
1997 - 1998 Teaching Assistant, Indiana University
Summer 1997 Summer Research Assistant, Jefferson Lab

Awards and Honors

2015 Jefferson Science Associates Sabbatical Fellowship
2010 Trustees' Award for Undergraduate Instruction
2007 Konopinski Award for Outstanding Teaching
2000 - 2002 Cornell Fellow
1999 - 2000 Barry M. Goldwater Scholar
2000 Outstanding Undergraduate in Physics, Indiana University
1999 Hugh Brown Memorial Scholarship, Physics, Indiana University
1999 Elected to ΦBK
1999 Marie Wilcox Scholarship, Mathematics, Indiana University
1999 $\Sigma\Xi$ Undergraduate Research Award
1998 Elected to $\Sigma\Pi\Sigma$ National Physics Honor Society
1998 Outstanding Undergraduate Associate Instructor, Physics, Indiana University

Professional Service and Society Membership

2016	Member of the DOE Office of Nuclear Physics Committee of Visitors
2015	Member of the Long Range Planning Committee for Nuclear Physics
2013	Member of the Review Committee for LQCD-ext and LQCD/ARRA Projects
2013 - 2016	Member of the Nuclear Science Advisory Committee
2012 -	GlueX Collaboration Deputy Spokesperson
2013 - 2014	BESIII Light Hadron Working Group Co-Convener
2010 - 2012	BESIII Charmonium Working Group Co-Convener
2007 - 2010	Member of the GlueX Collaboration Board (2009: Chair)
2007 - 2008	CLEO-c Physics Analysis Coordinator
2006 - 2010	Indiana University Applied Physics Program Coordinator
since 2005	Member of the American Physical Society
since 1999	Member of the $\Sigma\Xi$ Scientific Research Society

Selected Publications

Refereed publications are denoted with an asterisk (). Full publication list includes over 250 publications in refereed journals.*

M.R. Shepherd, J.J. Dudek, and R.E. Mitchell, “Searching for the rules that govern hadron construction,” *Nature* **534**, 487 (2016).*

M. Ablikim *et al.* [BESIII Collaboration], “Amplitude analysis of the $\pi^0\pi^0$ system produced in radiative J/ψ decays,” *Phys. Rev. D* **92**, 052003 (2015). [arXiv:1506.00546 [hep-ex]].*

E. G. Anassontzis *et al.*, “Relative gain monitoring of the GlueX calorimeters,” *Nucl. Instrum. Meth. A* **738**, 41 (2014).*

M. Dugger *et al.* [The GlueX Collaboration], “A study of decays to strange final states with GlueX in Hall D using components of the BaBar DIRC,” arXiv:1408.0215 [physics.ins-det].

M. Shepherd, “GlueX at Jefferson Lab: a search for exotic states of matter in photon-proton collisions,” *Proceedings of Science, Bormio2014*, 004 (2014).

K. Moriya *et al.*, “A measurement of the energy and timing resolution of the GlueX Forward Calorimeter using an electron beam,” *Nucl. Instrum. Meth. A* **726**, 60 (2013).*

A. AlekSejvs *et al.* [GlueX Collaboration], “An initial study of mesons and baryons containing strange quarks with GlueX,” arXiv:1305.1523 [nucl-ex].

M. Dugger *et al.* [GlueX Collaboration], “A study of meson and baryon decays to strange final states with GlueX in Hall D (A proposal to the 39th Jefferson Lab Program Advisory Committee),” arXiv:1210.4508 [hep-ex].

P. Guo, R. Mitchell, M. Shepherd and A. P. Szczepaniak, “Amplitudes for the analysis of the decay $J/\psi \rightarrow K^+K^-\pi^0$,” *Phys. Rev. D* **85**, 056003 (2012) [arXiv:1112.3284 [hep-ph]].*

B. D. Schaefer, R. E. Mitchell, P. McChesney, M. R. Shepherd and J. M. Frye, “Radiation Damage of F8 Lead Glass with 20 MeV Electrons,” *Nucl. Instrum. Meth. B* **274**, 111 (2012) [arXiv:1107.3332 [physics.ins-det]].*

G. S. Adams *et al.* [CLEO Collaboration], “Amplitude analyses of the decays $\chi_{c1} \rightarrow \eta\pi^+\pi^-$ and $\chi_{c1} \rightarrow \eta'\pi^+\pi^-$,” *Phys. Rev. D* **84**, 112009 (2011) [arXiv:1109.5843 [hep-ex]].*

P. U. E. Onyisi *et al.* [CLEO Collaboration], “Branching fractions for $\chi_{cJ} \rightarrow p\bar{p}\pi^0$, $p\bar{p}\eta$, and $p\bar{p}\omega$,” *Phys. Rev. D* **82**, 011103 (2010) [arXiv:1005.5374 [hep-ex]].*

- J. V. Bennett, M. Kornicer, M. R. Shepherd and M. M. Ito, “Precision timing measurement of phototube pulses using a flash analog-to-digital converter,” *Nucl. Instrum. Meth. A* **622**, 225 (2010) [arXiv:1005.5349 [physics.ins-det]].*
- M. R. Shepherd, “The GlueX Experiment,” *Proceedings of the Tenth Conference on the Intersection of Particle and Nuclear Physics*, AIP Conf. Proc. 1182, 816 (2009).
- M. R. Shepherd, “Leptonic and semileptonic decays of the $D_{(s)}$ at CLEO-c,” *Proceedings of the International Conference on Particle and Nuclear Physics (PANIC08)*, 732 (2009).
- M. R. Shepherd, “Decays and transitions of heavy quarkonia at CLEO-c,” *Proceedings of the International Conference on Particle and Nuclear Physics (PANIC08)*, 729 (2009).
- R. E. Mitchell *et al.* [CLEO Collaboration], “ J/ψ and $\psi(2S)$ Radiative Decays to η_c ,” *Phys. Rev. Lett.* **102**, 011801 (2009) [arXiv:0805.0252 [hep-ex]].*
- M. R. Shepherd, “Light meson spectroscopy results from CLEO-c,” *Proceedings of the International Workshop on e^+e^- Collisions from ϕ to ψ* , *Nucl. Phys. B Proc. Suppl.*, 184 (2008).
- M. R. Shepherd, “Heavy quark spectroscopy results from CLEO-c,” *Proceedings of the International Workshop on e^+e^- Collisions from ϕ to ψ* , *Nucl. Phys. B Proc. Suppl.*, 343 (2008).
- J. V. Bennett *et al.* [CLEO Collaboration], “Observation of χ_{cJ} radiative decays to light vector mesons,” *Phys. Rev. Lett.* **101**, 151801 (2008) [arXiv:0807.3718 [hep-ex]].*
- B. D. Leverington *et al.*, “Performance of the prototype module of the GlueX electromagnetic barrel calorimeter,” *Nucl. Instrum. Meth. A* **596**, 327 (2008).*
- M. R. Shepherd, “Hadronic Physics at CLEO-c,” *Proceedings of the XII International Conference on Hadronic Spectroscopy*, Frascati Physics Series, Volume XLVI (2007) [arXiv:0801.1024 [hep-ex]].
- N. E. Adam *et al.* [CLEO Collaboration], “A Study of Exclusive Charmless Semileptonic B Decay and $|V_{ub}|$,” *Phys. Rev. Lett.* **99**, 041802 (2007) [arXiv:hep-ex/0703041].*
- D. M. Asner *et al.* [CLEO Collaboration], “A Study of Exclusive Charmless Semileptonic B Decays and Extraction of $|V_{ub}|$ at CLEO,” *Phys. Rev. D* **76**, 012007 (2007) [arXiv:hep-ex/0703042].*
- A. R. Dzierba *et al.*, “A partial wave analysis of the $\pi^-\pi^-\pi^+$ and $\pi^-\pi^0\pi^0$ systems and the search for a $J^{PC} = 1^{-+}$ meson,” *Phys. Rev. D* **73**, 072001 (2006) [arXiv:hep-ex/0510068].*
- M. R. Shepherd, “The Differential Decay Rates of Exclusive Charmless Semileptonic B Meson Decay,” Ph.D. Thesis, Cornell University, 2005.

Talks

Invited talks are denoted with an asterisk ().*

“Hadron Spectroscopy,” A series of three lectures given at the *National Nuclear Physics Summer School*, Massachusetts Institute of Technology (July 2016).*

“The current status of the GlueX experiment at Jefferson Lab,” *April Meeting of the American Physical Society*, Salt Lake City (April 2016).

“Searching for Exotic Configurations of Quarks and Gluons,” *Indiana University Physics Department Colloquium*, Bloomington, IN (September 2015).

“Current Experiments,” a lecture at the *Indiana University Summer School on Reaction Theory*, Bloomington, IN (June 2015).

“Meson Spectroscopy,” A series of five lectures given at *Hampton University Graduate Studies at JLab (HUGS) Summer School*, Jefferson Lab (June 2015).*

“The Worldwide Search for Exotic Mesons,” *Conference on Intersections in Particle and Nuclear Physics*, Vail, CO (May 2015).*

“The $\pi^0\pi^0$ System in $J/\psi \rightarrow \gamma\pi^0\pi^0$,” *Workshop on Future Directions in Amplitude Analysis*, Jefferson Lab (November 2014).*

“Recent Experimental Developments in Heavy Quarkonium,” *Quark Confinement and the Hadron Spectrum XI*, St. Petersburg, Russia (September 2014).*

“Recent Results from the BESIII Experiment,” *Congress of the Canadian Association of Physicists*, Sudbury, Ontario (June 2014).*

“The Ongoing Quest to Understand the QCD Spectrum of Mesons,” *Physics Colloquium at Argonne National Lab*, Lemont, IL (May 2014).*

“The Ongoing Quest to Understand the QCD Spectrum of Mesons,” *Physics Colloquium at Old Dominion University*, Norfolk, VA (April 2014).*

“AmpTools: A GPU Accelerated Toolkit for Amplitude Analysis,” *TUM Excellence Center Workshop on Likelihood Evaluation on GPUs*, Munich, Germany (April 2014).*

“Charging Up the XYZ Spectrum: Recent Experimental Developments in Charmonium Spectroscopy,” *APS April Meeting*, Savannah, GA (April 2014).*

“GlueX at Jefferson Lab: A Search for Exotic States of Matter in Photon-proton Collisions,” *International Winter Conference on Nuclear Physics*, Bormio, Italy (January 2014).*

“The GlueX Experiment at Jefferson Lab,” *SLAC Experimental Seminar*, Menlo Park, CA (September 2013).*

“Recent Hadronic Physics Results from BESIII,” *Meeting of the APS Topical Group on Hadronic Physics*, Denver, CO (April 2103).*

“Current PWA Projects in Hall D,” *Jefferson Lab Joint Theory, Hall B, Hall D Seminar*, Newport News, VA (December 2012).*

“GlueX: A search for light quark exotic mesons at Jefferson Lab,” *Meeting of the PANDA Collaboration* Evanston, IL (June 2012).*

“A study of meson and baryon decays to strange final states with GlueX,” *The 39th Meeting of the Jefferson Lab PAC*, Newport News, VA (June 2012).

“Electron Positron Collisions in the Charmonium Region: Results from CLEO-c and BESIII,” *APS April Meeting*, Atlanta (April 2012).*

“AmpTools: A Utility Library for Amplitude Analysis,” *Jefferson Lab Amplitude Analysis Workshop* Newport News (June 2011).

“The Experimental Spectrum of Hadrons,” *APS April Meeting*, Anaheim (May 2011).*

“Amplitude Analysis Tools,” *Workshop on Amplitude Analysis in Hadronic Physics*, ECT* Trento, Italy (February 2011).*

“Amplitude Analysis on GPUs,” *Parallelism in Nuclear Physics*, Newport News (January 2011).*

“Exploring QCD in the Charmonium System,” *Topical QCD*, Cairns, Australia (September 2010).*

“Searching for Interesting Bound States of QCD with the GlueX Experiment at Jefferson Lab,” *Strong Interactions in the 21st Century*, Tata Institute for Fundamental Research, Mumbai, India (February 2010).*

“Searching for Exotic Mesons at GlueX,” *Joint US-Japan Joint Workshop on Hadronic Physics*, Waikoloa, HI (October 2009).*

“The GlueX Experiment in Hall D,” *Seminar for students in the Jefferson Lab SULI Program*, Newport News, VA (July 2009).

“The GlueX Experiment,” *Tenth Conference on the Intersections of Particle and Nuclear Physics*, La Jolla, CA (May 2009).*

“Heavy Quarkonia Results from CLEO-c,” *SLAC Experimental Seminar*, Menlo Park, CA (May 2009).*

“Recent Hadronic Physics Results from CLEO-c,” *Third Meeting of the APS Topical Group on Hadronic Physics*, Denver, CO (May 2009).*

“Leptonic and Semileptonic Decays of D and D_s Mesons at CLEO-c,” *International Conference on Particles and Nuclei: PANIC08*, Eilat, Israel (November 2008).

“Heavy Quarkonia Results from CLEO-c,” *International Conference on Particles and Nuclei: PANIC08*, Eilat, Israel (November 2008).

“Hybrid Mesons: Prospects for the GlueX Experiment,” *The Nuclear Physics Challenge to Lattice QCD*, Glasgow, UK (April 2008).*

“Light Meson Spectroscopy Results from CLEO-c,” *International Workshop on e^+e^- Collisions from ϕ to ψ* , Frascati, Italy (April 2008).

“Heavy Quark Spectroscopy Results from CLEO-c,” *International Workshop on e^+e^- Collisions from ϕ to ψ* , Frascati, Italy (April 2008).

“The GlueX Detector,” *Workshop on Photon-Hadron Physics*, Jefferson Lab (March 2008).*

“Overview of $B \rightarrow V\ell\nu$ Measurements,” *HFAG V_{cb} Workshop*, Heidelberg, Germany (December 2007).*

“Amplitude Analysis: Physics and Tools,” *BES-Belle-CLEO-BaBar Joint Workshop on Charm Physics*, Beijing, China (November 2007).

“The GlueX Experiment,” *High Energy Physics Seminar*, University of Notre Dame (November 2007).*

“Hadronic Physics at CLEO-c,” *XII International Conference on Hadron Spectroscopy: HADRON07*, Frascati, Italy (October 2007).*

“Recent Results in Meson Spectroscopy,” *Jefferson Lab Users’ Group Meeting*, (June 2007).*

“The Search for Exotic Mesons at GlueX,” *High Energy/Nuclear Physics Seminar*, University of Rochester (November, 2006).*

“Experimental Status of and Future Prospects for Exotic Mesons,” *Second Meeting of the APS Topical Group on Hadronic Physics*, Nashville, TN (October, 2006).*

“ D , D_s , and Charmonium Physics at CLEO-c,” *MESON 2006*, Krakow, Poland (June, 2006).*

“A Charming Sample of CLEO-c Physics,” *High Energy Physics Seminar*, Indiana University, Bloomington, IN (January 2006).

“*B* Physics from CLEO,” *XXXIXth Rencontres de Moriond, QCD and Hadronic Interactions*, La Thuile, Italy (March, 2004).*

“Charmless Semileptonic *B* Decays at CLEO,” *High Energy Physics Seminar*, Indiana University, Bloomington, IN (February, 2004).*

“Charmless Semileptonic *B* Decays at CLEO,” *Jefferson Lab Physics Seminar*, Newport News, VA (January, 2004).*

Full Publication List (Refereed Journals Only)

M. Ablikim *et al.* [BESIII Collaboration], “Amplitude analysis of the $\pi^0\pi^0$ system produced in radiative J/ψ decays,” *Phys. Rev. D* **92**, 052003 (2015). [arXiv:1506.00546 [hep-ex]].

T. G. Collaboration *et al.* [GlueX Collaboration], “First Results from The GlueX Experiment,” arXiv:1512.03699 [nucl-ex].

M. Ablikim *et al.* [BESIII Collaboration], “Measurement of the $e^+e^- \rightarrow \pi^+\pi^-$ cross section between 600 and 900 MeV using initial state radiation,” *Phys. Lett. B* **753**, 629 (2016). [arXiv:1507.08188 [hep-ex]].

M. Ablikim *et al.* [BESIII Collaboration], “Searches for isospin-violating transitions $\chi_{c0,2} \rightarrow \pi^0\eta_c$,” *Phys. Rev. D* **91**, 112018 (2015) [arXiv:1502.02641 [hep-ex]].

M. Ablikim *et al.* [BESIII Collaboration], “Measurement of y_{CP} in $D^0 - \bar{D}^0$ oscillation using quantum correlations in $e^+e^- \rightarrow D^0\bar{D}^0$ at $\sqrt{s} = 3.773$ GeV,” *Phys. Lett. B* **744**, 339 (2015) [arXiv:1501.01378 [hep-ex]].

M. Ablikim *et al.* [BESIII Collaboration], “Study of $J/\psi \rightarrow \eta\phi\pi^+\pi^-$ at BESIII,” *Phys. Rev. D* **91**, 052017 (2015) [arXiv:1412.5258 [hep-ex]].

M. Ablikim *et al.* [BESIII Collaboration], “Precision measurement of the D^{*0} decay branching fractions,” *Phys. Rev. D* **91**, 031101 (2015) [arXiv:1412.4566 [hep-ex]].

M. Ablikim *et al.* [BESIII Collaboration], “Search for the $Y(4140)$ via $e^+e^- \rightarrow \gamma\phi J/\psi$ at $\sqrt{s}=4.23$, 4.26 and 4.36 GeV,” *Phys. Rev. D* **91**, 032002 (2015) [arXiv:1412.1867 [hep-ex]].

M. Ablikim *et al.* [BESIII Collaboration], “Evidence for $e^+e^- \rightarrow \gamma\chi_{c1,2}$ at center-of-mass energies from 4.009 to 4.360 GeV,” *Chin. Phys. C* **39**, 041001 (2015) [arXiv:1411.6336 [hep-ex]].

M. Ablikim *et al.* [BESIII Collaboration], “Study of $e^+e^- \rightarrow \omega\chi_{cJ}$ at center-of-mass energies from 4.21 to 4.42 GeV,” *Phys. Rev. Lett.* **114**, 092003 (2015) [arXiv:1410.6538 [hep-ex]].

M. Ablikim *et al.* [BESIII Collaboration], “Search for the weak decays $J/\psi \rightarrow D_s^{(*)}e\nu_e$,” *Phys. Rev. D* **90**, 112014 (2014) [arXiv:1410.8426 [hep-ex]].

M. Ablikim *et al.* [BESIII Collaboration], “Observation of $e^+e^- \rightarrow \pi^0\pi^0h_c$ and a Neutral Charmoniumlike Structure $Z_c(4020)^0$,” *Phys. Rev. Lett.* **113**, 212002 (2014) [arXiv:1409.6577 [hep-ex]].

M. Ablikim *et al.* [BESIII Collaboration], “Search for *C*-parity violation in $J/\psi \rightarrow \gamma\gamma$ and $\gamma\phi$,” *Phys. Rev. D* **90**, 092002 (2014) [arXiv:1409.4040 [hep-ex]].

M. Ablikim *et al.* [BESIII Collaboration], “Observation of $J/\psi \rightarrow p\bar{p}a_0(980)$ at BESIII,” *Phys. Rev. D* **90**, no. 5, 052009 (2014) [arXiv:1408.3938 [hep-ex]].

M. Dugger *et al.* [The GlueX Collaboration], “A study of decays to strange final states with GlueX in Hall D using components of the BaBar DIRC,” arXiv:1408.0215 [physics.ins-det].

M. Ablikim *et al.* [BESIII Collaboration], “Study of $e^+e^- \rightarrow p\bar{p}\pi^0$ in the vicinity of the $\psi(3770)$,” *Phys. Rev. D* **90**, 032007 (2014) [arXiv:1406.2486 [hep-ex]].

M. Ablikim *et al.* [BESIII Collaboration], “Search for the radiative transitions $\psi(3770) \rightarrow \gamma\eta_c$ and $\gamma\eta_c(2S)$,” *Phys. Rev. D* **89**, 112005 (2014) [arXiv:1405.3190 [hep-ex]].

- M. Ablikim *et al.* [BESIII Collaboration], “Measurement of the branching fraction for $\psi(3686) \rightarrow \omega K^+ K^-$,” Phys. Rev. D **89**, 112006 (2014) [arXiv:1405.1571 [hep-ex]].
- M. Ablikim *et al.* [BESIII Collaboration], “Precision measurement of the mass of the τ lepton,” Phys. Rev. D **90**, no. 1, 012001 (2014) [arXiv:1405.1076 [hep-ex]].
- M. Ablikim *et al.* [BESIII Collaboration], “Measurement of the $D \rightarrow K^- \pi^+$ strong phase difference in $\psi(3770) \rightarrow D^0 \bar{D}^0$,” Phys. Lett. B **734**, 227 (2014) [arXiv:1404.4691 [hep-ex]].
- M. Ablikim *et al.* [BESIII Collaboration], “Observation of $\eta' \rightarrow \pi^+ \pi^- \pi^+ \pi^-$ and $\eta' \rightarrow \pi^+ \pi^- \pi^0 \pi^0$,” Phys. Rev. Lett. **112**, 251801 (2014) [Addendum-ibid. **113**, 039903 (2014)] [arXiv:1404.0096 [hep-ex]].
- M. Ablikim *et al.* [BESIII Collaboration], “Observation of electromagnetic Dalitz decays $J/\psi \rightarrow P e^+ e^-$,” Phys. Rev. D **89**, 092008 (2014) [arXiv:1403.7042 [hep-ex]].
- M. Ablikim *et al.* [BESIII Collaboration], “Study of $e^+ e^- \rightarrow p \bar{p}$ in the vicinity of $\psi(3770)$,” Phys. Lett. B **735**, 101 (2014) [arXiv:1403.6011 [hep-ex]].
- M. Ablikim *et al.* [BESIII Collaboration], “Search for the rare decays $J/\psi \rightarrow D_s^- \rho^+$ and $J/\psi \rightarrow \bar{D}^0 \bar{K}^{*0}$,” Phys. Rev. D **89**, 071101 (2014) [arXiv:1402.4025 [hep-ex]].
- M. Ablikim *et al.* [BESIII Collaboration], “Measurement of χ_{cJ} decaying into $\eta' K^+ K^-$,” Phys. Rev. D **89**, 074030 (2014) [arXiv:1402.2023 [hep-ex]].
- M. Ablikim *et al.* [BESIII Collaboration], “Amplitude Analysis of the $D^+ \rightarrow K_S^0 \pi^+ \pi^0$ Dalitz Plot,” Phys. Rev. D **89**, 052001 (2014) [arXiv:1401.3083 [hep-ex]].
- M. Ablikim *et al.* [BESIII Collaboration], “Precision measurements of $B(D^+ \rightarrow \mu^+ \nu_\mu)$, the pseudoscalar decay constant f_{D^+} , and the quark mixing matrix element $|V_{cd}|$,” Phys. Rev. D **89**, 051104 (2014) [arXiv:1312.0374 [hep-ex]].
- E. G. Anassontzis *et al.*, “Relative gain monitoring of the GlueX calorimeters,” Nucl. Instrum. Meth. A **738**, 41 (2014).*
- M. Ablikim *et al.* [BESIII Collaboration], “Observation of $e^+ e^- \rightarrow \gamma X(3872)$ at BESIII,” Phys. Rev. Lett. **112**, 092001 (2014) [arXiv:1310.4101 [hep-ex]].
- M. Ablikim *et al.* [BESIII Collaboration], “Observation of a charged $(D\bar{D}^*)^\pm$ mass peak in $e^+ e^- \rightarrow \pi D\bar{D}^*$ at $\sqrt{s} = 4.26$ GeV,” Phys. Rev. Lett. **112**, 022001 (2014) [arXiv:1310.1163 [hep-ex]].
- M. Ablikim *et al.* [BESIII Collaboration], “Observation of a charged charmoniumlike structure in $e^+ e^- \rightarrow (D^* \bar{D}^*)^\pm \pi^\mp$ at $\sqrt{s} = 4.26$ GeV,” Phys. Rev. Lett. **112**, 132001 (2014) [arXiv:1308.2760 [hep-ex]].
- M. Shepherd, “GlueX at Jefferson Lab: a search for exotic states of matter in photon-proton collisions,” Proceedings of Science, Bormio2014, 004 (2014).
- M. Ablikim *et al.* [BESIII Collaboration], “Search for $\eta_c(2S)$ and h_c decays into $p \bar{p}$,” Phys. Rev. D **88**, 112001 (2013) [arXiv:1310.6099 [hep-ex]].
- M. Ablikim *et al.* [BESIII Collaboration], “Observation of the decay $\psi(3686) \rightarrow \Lambda \bar{\Sigma}^\pm \pi^\mp + c.c.$,” Phys. Rev. D **88**, 112007 (2013) [arXiv:1310.5826 [hep-ex]].
- M. Ablikim *et al.* [BESIII Collaboration], “Observation of a charged charmoniumlike structure $Z_c(4020)$ and search for the $Z_c(3900)$ in $e^+ e^-$ to $\pi^+ \pi^- h_c$,” Phys. Rev. Lett. **111**, 242001 (2013) [arXiv:1309.1896 [hep-ex]].
- M. Ablikim *et al.* [BESIII Collaboration], “Measurement of the integrated luminosities of the data taken by BESIII at $\sqrt{s} = 3.650$ and 3.773 GeV,” Chin. Phys. C **37**, 123001 (2013) [arXiv:1307.2022 [hep-ex]].
- M. Ablikim *et al.* [BESIII Collaboration], “Precision Measurements of $\mathcal{B}[\psi(3686) \rightarrow \pi^+ \pi^- J/\psi]$ and $\mathcal{B}[J/\psi \rightarrow l^+ l^-]$,” Phys. Rev. D **88**, 032007 (2013) [arXiv:1307.1189].

- M. Ablikim *et al.* [BESIII Collaboration], “Observation of a structure at 1.84 GeV/c² in the $3(\pi^+\pi^-)$ mass spectrum in $J/\psi \rightarrow \gamma 3(\pi^+\pi^-)$ decays,” Phys. Rev. D **88**, 091502 (2013) [arXiv:1305.5333 [hep-ex]].
- M. Ablikim *et al.* [BESIII Collaboration], “Search for Baryonic Decays of $\psi(3770)$ and $\psi(4040)$,” Phys. Rev. D **87**, 112011 (2013) [arXiv:1305.1782 [hep-ex]].
- M. Ablikim *et al.* [BESIII Collaboration], “Search for the Lepton Flavor Violation Process $J/\psi \rightarrow e\mu$ at BESIII,” Phys. Rev. D **87**, 112007 (2013) [arXiv:1304.3205 [hep-ex]].
- M. Ablikim *et al.* [BESIII Collaboration], “Partial wave analysis of $\psi(2S) \rightarrow p\bar{p}\eta$,” Phys. Rev. D **88**, 032010 (2013) [arXiv:1304.1973 [hep-ex]].
- M. Ablikim *et al.* [BESIII Collaboration], “Measurement of $\eta' \rightarrow \pi^+\pi^-e^+e^-$ and $\eta' \rightarrow \pi^+\pi^-\mu^+\mu^-$,” Phys. Rev. D **87**, 092011 (2013) [arXiv:1303.7360 [hep-ex]].
- M. Ablikim *et al.* [BESIII Collaboration], “Study of $\psi(3686) \rightarrow \omega K\bar{K}\pi$ decays,” Phys. Rev. D **87**, 092006 (2013) [arXiv:1303.6360 [hep-ex]].
- M. Ablikim *et al.* [BESIII Collaboration], “Observation of a charged charmoniumlike structure in $e^+e^- \rightarrow \pi^+\pi^- J/\psi$ at $\sqrt{s} = 4.26$ GeV,” Phys. Rev. Lett. **110**, 252001 (2013) [arXiv:1303.5949 [hep-ex]].
- M. Ablikim *et al.* [BESIII Collaboration], “Study of $J/\psi \rightarrow \omega p\bar{p}$ at BESIII,” Phys. Rev. D **87**, 112004 (2013) [arXiv:1303.3108 [hep-ex]].
- M. Ablikim *et al.* [BESIII Collaboration], “Evidence for $\eta_c(2S)$ in $\psi(3686) \rightarrow \gamma K_S^0 K^\pm \pi^\mp \pi^+ \pi^-$,” Phys. Rev. D **87**, 052005 (2013) [arXiv:1301.1476 [hep-ex]].
- M. Ablikim *et al.* [BESIII Collaboration], “Partial wave analysis of $J/\psi \rightarrow \gamma\eta\eta$,” Phys. Rev. D. **87**, 092009 (2013) [arXiv:1301.0053 [hep-ex]].
- M. Ablikim *et al.* [BESIII Collaboration], “Study of the near-threshold $\omega\phi$ mass enhancement in doubly OZI suppressed $J/\psi \rightarrow \gamma\omega\phi$ decays,” Phys. Rev. D **87**, 032008 (2013) [arXiv:1211.5668 [hep-ex]].
- M. Ablikim *et al.* [BESIII Collaboration], “Measurements of $\psi' \rightarrow \bar{p}K^+\Sigma^0$ and $\chi_{cJ} \rightarrow \bar{p}K^+\Lambda$,” Phys. Rev. D **87**, 012007 (2013) [arXiv:1211.5631 [hep-ex]].
- M. Ablikim *et al.* [BESIII Collaboration], “Measurements of the branching fractions for J/ψ and $\psi(2S) \rightarrow \Lambda\bar{\Lambda}\pi^0$ and $\Lambda\bar{\Lambda}\eta$,” Phys. Rev. D **87**, 052007 (2013) [arXiv:1211.4682 [hep-ex]].
- M. Ablikim *et al.* [BESIII Collaboration], “Search for η and $\eta' \rightarrow \pi^+e^-\bar{\nu}_e + c.c.$ decays in $J\psi \rightarrow \phi\eta$ and $\phi\eta'$,” Phys. Rev. D **87**, 032006 (2013) [arXiv:1211.3600 [hep-ex]].
- M. Ablikim *et al.* [BES Collaboration], “Measurements of Baryon Pair Decays of χ_{cJ} Mesons,” Phys. Rev. D **87**, 032007 (2013) [Erratum-ibid. D **87**, 059901 (2013)] [arXiv:1211.2283 [hep-ex]].
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