

BABAR group publications (July 2012-December 2014)

- [1] A.J. Bevan *et al.* (BABAR Collaboration, Belle Collaboration), “The Physics of the B Factories,” *Eur. Phys. J.* **C74**, 3026 (2014), [arXiv:1406.6311 \[hep-ex\]](#)
- [2] J.P. Lees *et al.* (BABAR Collaboration), “Search for a Dark Photon in e^+e^- Collisions at BaBar,” *Phys. Rev. Lett.* **113**, 201801 (2014), [arXiv:1406.2980 \[hep-ex\]](#)
- [3] J.P. Lees *et al.* (BABAR Collaboration), “Measurements of Direct CP Asymmetries in $B \rightarrow X_s \gamma$ decays using Sum of Exclusive Decays,” *Phys. Rev.* **D90**, 092001 (2014), [arXiv:1406.0534 \[hep-ex\]](#)
- [4] J.P. Lees *et al.* (BABAR Collaboration), “Measurement of Collins asymmetries in inclusive production of charged pion pairs in e^+e^- annihilation at BABAR,” *Phys. Rev.* **D90**, 052003 (2014), [arXiv:1309.5278 \[hep-ex\]](#)
- [5] J.P. Lees *et al.* (BABAR Collaboration), “Dalitz plot analysis of $\eta_c \rightarrow K^+K^-\eta$ and $\eta_c \rightarrow K^+K^-\pi^0$ in two-photon interactions,” *Phys. Rev.* **D89**, 112004 (2014), [arXiv:1403.7051 \[hep-ex\]](#)
- [6] J.P. Lees *et al.* (BABAR Collaboration), “Evidence for the baryonic decay $\bar{B}^0 \rightarrow D^0 \Lambda \bar{\Lambda}$,” *Phys. Rev.* **D89**, 112002 (2014), [arXiv:1401.5990 \[hep-ex\]](#)
- [7] J.P. Lees *et al.* (BABAR Collaboration), “Study of the reaction $e^+e^- \rightarrow \psi(2S)\pi^-\pi^-$ via initial state radiation at BaBar,” *Phys. Rev.* **D89**, 111103 (2014), [arXiv:1211.6271 \[hep-ex\]](#)
- [8] J.P. Lees *et al.* (BABAR Collaboration), “Antideuteron production in $\Upsilon(nS)$ decays and in $e^+e^- \rightarrow q\bar{q}$ at $\sqrt{s} \approx 10.58$ GeV,” *Phys. Rev.* **D89**, 111102 (2014), [arXiv:1403.4409 \[hep-ex\]](#)
- [9] J.P. Lees *et al.* (BABAR Collaboration), “Cross sections for the reactions $e^+e^- \rightarrow K_S^0 K_L^0$, $K_S^0 K_L^0 \pi^+ \pi^-$, $K_S^0 K_S^0 \pi^+ \pi^-$, and $K_S^0 K_S^0 K^+ K^-$ from events with initial-state radiation,” *Phys. Rev.* **D89**, 092002 (2014), [arXiv:1403.7593 \[hep-ex\]](#)
- [10] J.P. Lees *et al.* (BABAR Collaboration), “Search for the decay $\bar{B}^0 \rightarrow \Lambda_c^+ \bar{p} p \bar{p}$,” *Phys. Rev.* **D89**, 071102 (2014), [arXiv:1312.6800 \[hep-ex\]](#)
- [11] J.P. Lees *et al.* (BABAR Collaboration), “Evidence for the decay $B^0 \rightarrow \omega \omega$ and search for $B^0 \rightarrow \omega \phi$,” *Phys. Rev.* **D89**, 051101 (2014), [arXiv:1312.0056 \[hep-ex\]](#)
- [12] J.P. Lees *et al.* (BABAR Collaboration), “Search for lepton-number violating $B^+ \rightarrow X^- l^+ l^+$ decays,” *Phys. Rev.* **D89**, 011102 (2014), [arXiv:1310.8238 \[hep-ex\]](#)
- [13] J.P. Lees *et al.* (BABAR Collaboration), “Measurement of the $B \rightarrow X_s l^+ l^-$ branching fraction and search for direct CP violation from a sum of exclusive final states,” *Phys. Rev. Lett.* **112**, 211802 (2014), [arXiv:1312.5364 \[hep-ex\]](#)
- [14] B. Aubert *et al.* (BABAR Collaboration), “The BABAR Detector: Upgrades, Operation and Performance,” *Nucl. Instrum. Meth.* **A729**, 615–701 (2013), [arXiv:1305.3560 \[physics.ins-det\]](#)
- [15] J.P. Lees *et al.* (BABAR Collaboration), “Time-Integrated Luminosity Recorded by the BABAR Detector at the PEP-II e^+e^- Collider,” *Nucl. Instrum. Meth.* **A726**, 203–213 (2013), [arXiv:1301.2703 \[hep-ex\]](#)
- [16] J.P. Lees *et al.* (BABAR Collaboration), “Measurement of an Excess of $B \rightarrow D^{(*)} \tau \nu$ Decays and Implications for Charged Higgs Bosons,” *Phys. Rev.* **D88**, 072012 (2013), [arXiv:1303.0571 \[hep-ex\]](#)
- [17] J.P. Lees *et al.* (BABAR Collaboration), “Measurement of the $e^+e^- \rightarrow p\bar{p}$ cross section in the energy range from 3.0 to 6.5 GeV,” *Phys. Rev.* **D88**, 072009 (2013), [arXiv:1308.1795 \[hep-ex\]](#)
- [18] J.P. Lees *et al.* (BABAR Collaboration), “Measurement of the $B^+ \rightarrow \omega l^+ \nu$ branching fraction with semileptonically tagged B mesons,” *Phys. Rev.* **D88**, 072006 (2013), [arXiv:1308.2589 \[hep-ex\]](#)

- [19] J.P. Lees *et al.* (BABAR Collaboration), “Measurement of the Mass of the D^0 Meson,” *Phys. Rev. D* **88**, 071104 (2013), [arXiv:1308.1151 \[hep-ex\]](#)
- [20] J.P. Lees *et al.* (BABAR Collaboration), “Search for a Low-Mass Scalar Higgs Boson Decaying to a Tau Pair in Single-Photon Decays of $\Upsilon(1S)$,” *Phys. Rev. D* **88**, 071102 (2013), [arXiv:1210.5669 \[hep-ex\]](#)
- [21] J.P. Lees *et al.* (BABAR Collaboration), “Measurement of the $D^{*+}(2010)$ natural line width and the $D^{*+}(2010) - D^0$ mass difference,” *Phys. Rev. D* **88**, 052003 (2013), [arXiv:1304.5009 \[hep-ex\]](#)
- [22] J.P. Lees *et al.* (BABAR Collaboration), “Precision Measurement of the $e^+e^- \rightarrow K^+K^-(\gamma)$ Cross Section with the Initial-State Radiation Method at BABAR,” *Phys. Rev. D* **88**, 032013 (2013), [arXiv:1306.3600 \[hep-ex\]](#)
- [23] J.P. Lees *et al.* (BABAR Collaboration), “A Search for the Rare Decays $B \rightarrow \pi l^+ l^-$ and $B^0 \rightarrow \eta l^+ l^-$,” *Phys. Rev. D* **88**, 032012 (2013), [arXiv:1303.6010 \[hep-ex\]](#)
- [24] J.P. Lees *et al.* (BABAR Collaboration), “Production of charged pions, kaons and protons in e^+e^- annihilations into hadrons at $\sqrt{s} = 10.54$ GeV,” *Phys. Rev. D* **88**, 032011 (2013), [arXiv:1306.2895 \[hep-ex\]](#)
- [25] J.P. Lees *et al.* (BABAR Collaboration), “Search for a light Higgs boson decaying to two gluons or $s\bar{s}$ in the radiative decays of $\Upsilon(1S)$,” *Phys. Rev. D* **88**, 031701 (2013), [arXiv:1307.5306 \[hep-ex\]](#)
- [26] J.P. Lees *et al.* (BABAR Collaboration), “Evidence of $B \rightarrow \tau\nu$ decays with hadronic B tags,” *Phys. Rev. D* **88**, 031102 (2013), [arXiv:1207.0698 \[hep-ex\]](#)
- [27] J.P. Lees *et al.* (BABAR Collaboration), “Measurement of CP -violating asymmetries in $B^0 \rightarrow (\rho\pi)^0$ decays using a time-dependent Dalitz plot analysis,” *Phys. Rev. D* **88**, 012003 (2013), [arXiv:1304.3503 \[hep-ex\]](#)
- [28] J.P. Lees *et al.* (BABAR Collaboration), “Measurement of the $D^*(2010)^+$ meson width and the $D^*(2010)^+ - D^0$ mass difference,” *Phys. Rev. Lett.* **111**, 111801 (2013), [arXiv:1304.5657 \[hep-ex\]](#)
- [29] J.P. Lees *et al.* (BABAR Collaboration), “Search for CP Violation in $B^0 - \bar{B}^0$ Mixing using Partial Reconstruction of $B^0 \rightarrow D^{*-} X l^+ \nu$ and a Kaon Tag,” *Phys. Rev. Lett.* **111**, 101802 (2013), [arXiv:1305.1575 \[hep-ex\]](#)
- [30] J.P. Lees *et al.* (BABAR Collaboration), “Search for $B \rightarrow K^{(*)} \nu \bar{\nu}$ and invisible quarkonium decays,” *Phys. Rev. D* **87**, 112005 (2013), [arXiv:1303.7465 \[hep-ex\]](#)
- [31] J.P. Lees *et al.* (BABAR Collaboration), “Study of $e^+e^- \rightarrow p\bar{p}$ via initial-state radiation at BABAR,” *Phys. Rev. D* **87**, 092005 (2013), [arXiv:1302.0055 \[hep-ex\]](#)
- [32] J.P. Lees *et al.* (BABAR Collaboration), “Study of the decay $\bar{B}^0 \rightarrow \Lambda_c^+ \bar{p} \pi^+ \pi^-$ and its intermediate states,” *Phys. Rev. D* **87**, 092004 (2013), [arXiv:1302.0191 \[hep-ex\]](#)
- [33] J.P. Lees *et al.* (BABAR Collaboration), “Observation of direct CP violation in the measurement of the Cabibbo-Kobayashi-Maskawa angle γ with $B^\pm \rightarrow D^{(*)} K^{(*)\pm}$ decays,” *Phys. Rev. D* **87**, 052015 (2013), [arXiv:1301.1029 \[hep-ex\]](#)
- [34] J.P. Lees *et al.* (BABAR Collaboration), “Search for CP violation in the Decays $D^\pm \rightarrow K_s^0 K^\pm$, $D_s^\pm \rightarrow K_s^0 K^\pm$, and $D_s^\pm \rightarrow K_s^0 \pi^\pm$,” *Phys. Rev. D* **87**, 052012 (2013), [arXiv:1212.3003 \[hep-ex\]](#)
- [35] J.P. Lees *et al.* (BABAR Collaboration), “Search for direct CP -violation in singly-Cabibbo suppressed $D^\pm \rightarrow K^+ K^- \pi^\pm$ decays,” *Phys. Rev. D* **87**, 052010 (2013), [arXiv:1212.1856 \[hep-ex\]](#)
- [36] J.P. Lees *et al.* (BABAR Collaboration), “Measurement of CP Asymmetries and Branching Fractions in Charmless Two-Body B -Meson Decays to Pions and Kaons,” *Phys. Rev. D* **87**, 052009 (2013), [arXiv:1206.3525 \[hep-ex\]](#)
- [37] J.P. Lees *et al.* (BABAR Collaboration), “Branching fraction measurement of $B^+ \rightarrow \omega l^+ \nu$ decays,” *Phys. Rev. D* **87**, 032004 (2013), [arXiv:1205.6245 \[hep-ex\]](#)

- [38] J.P. Lees *et al.* (BABAR collaboration), “Search for di-muon decays of a low-mass Higgs boson in radiative decays of the $\Upsilon(1S)$,” *Phys. Rev.* **D87**, 031102 (2013), [arXiv:1210.0287 \[hep-ex\]](#)
- [39] J.P. Lees *et al.* (BABAR Collaboration), “Measurement of $D^0 - \bar{D}^0$ Mixing and CP Violation in Two-Body D^0 Decays,” *Phys. Rev.* **D87**, 012004 (2013), [arXiv:1209.3896 \[hep-ex\]](#)
- [40] J.P. Lees *et al.* (BABAR Collaboration), “Measurement of $B(B \rightarrow X_s \gamma)$, the $B \rightarrow X_s \gamma$ photon energy spectrum, and the direct CP asymmetry in $B \rightarrow X_{s,d} \gamma$ decays,” *Phys. Rev.* **D86**, 112008 (2012), [arXiv:1207.5772 \[hep-ex\]](#)
- [41] J.P. Lees *et al.* (BABAR Collaboration), “Measurement of the Time-Dependent CP Asymmetry of Partially Reconstructed $B^0 \rightarrow D^{*+} D^{*-}$ Decays,” *Phys. Rev.* **D86**, 112006 (2012), [arXiv:1208.1282 \[hep-ex\]](#)
- [42] J.P. Lees *et al.* (BABAR Collaboration), “The branching fraction of $\tau^- \rightarrow \pi^- K_S^0 K_S^0 (\pi^0) \nu_\tau$ decays,” *Phys. Rev.* **D86**, 092013 (2012), [arXiv:1208.0376 \[hep-ex\]](#)
- [43] J.P. Lees *et al.* (BABAR Collaboration), “Study of high-multiplicity 3-prong and 5-prong τ decays at BABAR,” *Phys. Rev.* **D86**, 092010 (2012), [arXiv:1209.2734 \[hep-ex\]](#)
- [44] J.P. Lees *et al.* (BABAR Collaboration), “Search for resonances decaying to $\eta_c \pi^+ \pi^-$ in two-photon interactions,” *Phys. Rev.* **D86**, 092005 (2012), [arXiv:1206.2008 \[hep-ex\]](#)
- [45] J.P. Lees *et al.* (BABAR Collaboration), “Branching fraction and form-factor shape measurements of exclusive charmless semileptonic B decays, and determination of $|V_{ub}|$,” *Phys. Rev.* **D86**, 092004 (2012), [arXiv:1208.1253 \[hep-ex\]](#)
- [46] J.P. Lees *et al.* (BABAR Collaboration), “Study of the baryonic B decay $B^- \rightarrow \Sigma_c^{++} \bar{p} \pi^- \pi^-$,” *Phys. Rev.* **D86**, 091102 (2012), [arXiv:1208.3086 \[hep-ex\]](#)
- [47] J.P. Lees *et al.* (BABAR Collaboration), “Study of $X(3915) \rightarrow J/\psi \omega$ in two-photon collisions,” *Phys. Rev.* **D86**, 072002 (2012), [arXiv:1207.2651 \[hep-ex\]](#)
- [48] J.P. Lees *et al.* (BABAR Collaboration), “Exclusive Measurements of $b \rightarrow s \gamma$ Transition Rate and Photon Energy Spectrum,” *Phys. Rev.* **D86**, 052012 (2012), [arXiv:1207.2520 \[hep-ex\]](#)
- [49] J.P. Lees *et al.* (BABAR Collaboration), “Improved Limits on B^0 Decays to Invisible Final States and to $\nu \bar{\nu} \gamma$,” *Phys. Rev.* **D86**, 051105 (2012), [arXiv:1206.2543 \[hep-ex\]](#)
- [50] J.P. Lees *et al.* (BABAR Collaboration), “Study of the reaction $e^+ e^- \rightarrow J/\psi \pi^+ \pi^-$ via initial-state radiation at BaBar,” *Phys. Rev.* **D86**, 051102 (2012), [arXiv:1204.2158 \[hep-ex\]](#)
- [51] J.P. Lees *et al.* (BABAR Collaboration), “Precise Measurement of the $e^+ e^- \rightarrow \pi^+ \pi^- (\gamma)$ Cross Section with the Initial-State Radiation Method at BABAR,” *Phys. Rev.* **D86**, 032013 (2012), [arXiv:1205.2228 \[hep-ex\]](#)
- [52] J.P. Lees *et al.* (BABAR Collaboration), “Measurement of Branching Fractions and Rate Asymmetries in the Rare Decays $B \rightarrow K^{(*)} l^+ l^-$,” *Phys. Rev.* **D86**, 032012 (2012), [arXiv:1204.3933 \[hep-ex\]](#)
- [53] J.P. Lees *et al.* (BABAR Collaboration), “Study of $\bar{B} \rightarrow X_u \ell \bar{\nu}$ decays in $B\bar{B}$ events tagged by a fully reconstructed B meson decay and determination of $\|V_{ub}\|$,” *Phys. Rev.* **D86**, 032004 (2012), [arXiv:1112.0702 \[hep-ex\]](#)
- [54] J.P. Lees *et al.* (BABAR Collaboration), “Search for the decay modes $D^0 \rightarrow e^+ e^-$, $D^0 \rightarrow \mu^+ \mu^-$, and $D^0 \rightarrow e \mu$,” *Phys. Rev.* **D86**, 032001 (2012), [arXiv:1206.5419 \[hep-ex\]](#)
- [55] J.P. Lees *et al.* (BABAR Collaboration), “Cross Sections for the Reactions $e^+ e^- \rightarrow K^+ K^- \pi^+ \pi^-$, $K^+ K^- \pi^0 \pi^0$, and $K^+ K^- K^+ K^-$ Measured Using Initial-State Radiation Events,” *Phys. Rev.* **D86**, 012008 (2012), [arXiv:1103.3001 \[hep-ex\]](#)
- [56] J.P. Lees *et al.* (BABAR Collaboration), “A search for the decay modes $B^\pm \rightarrow h^\pm \tau^\pm l$,” *Phys. Rev.* **D86**, 012004 (2012), [arXiv:1204.2852 \[hep-ex\]](#)

- [57] J.P. Lees *et al.* (BABAR Collaboration), “Observation of Time Reversal Violation in the B^0 Meson System,” *Phys. Rev. Lett.* **109**, 211801 (2012), [arXiv:1207.5832 \[hep-ex\]](#)
- [58] J.P. Lees *et al.* (BABAR Collaboration), “Precision Measurement of the $B \rightarrow X_s \gamma$ Photon Energy Spectrum, Branching Fraction, and Direct CP Asymmetry $A_{CP}(B \rightarrow X_{s,d} \gamma)$,” *Phys. Rev. Lett.* **109**, 191801 (2012), [arXiv:1207.2690 \[hep-ex\]](#)
- [59] J.P. Lees *et al.* (BABAR Collaboration), “Evidence for an excess of $\bar{B} \rightarrow D^{(*)} \tau^- \bar{\nu}_\tau$ decays,” *Phys. Rev. Lett.* **109**, 101802 (2012), [arXiv:1205.5442 \[hep-ex\]](#)
- [60] J.P. Lees *et al.* (BABAR Collaboration), “Search for Low-Mass Dark-Sector Higgs Bosons,” *Phys. Rev. Lett.* **108**, 211801 (2012), [arXiv:1202.1313 \[hep-ex\]](#)
- [61] J.P. Lees *et al.* (BABAR Collaboration), “Study of CP violation in Dalitz-plot analyses of $B^0 \rightarrow K^+ K^- K_S^0$, $B^+ \rightarrow K^+ K^- K^+$, and $B^+ \rightarrow K_S^0 K_S^0 K^+$,” *Phys. Rev.* **D85**, 112010 (2012), [arXiv:1201.5897 \[hep-ex\]](#)
- [62] J.P. Lees *et al.* (BABAR Collaboration), “Initial-State Radiation Measurement of the $e^+ e^- \rightarrow \pi^+ \pi^- \pi^+ \pi^-$ Cross Section,” *Phys. Rev.* **D85**, 112009 (2012), [arXiv:1201.5677 \[hep-ex\]](#)
- [63] P. del Amo Sanchez *et al.* (BABAR Collaboration), “Observation and study of the baryonic B -meson decays $B \rightarrow D^{(*)} p \bar{p}(\pi)(\pi)$,” *Phys. Rev.* **D85**, 092017 (2012), [arXiv:1111.4387 \[hep-ex\]](#)
- [64] J.P. Lees *et al.* (BABAR Collaboration), “Search for the Decay $D^0 \rightarrow \gamma \gamma$ and Measurement of the Branching Fraction for $D^0 \rightarrow \pi^0 \pi^0$,” *Phys. Rev.* **D85**, 091107 (2012), [arXiv:1110.6480 \[hep-ex\]](#)
- [65] J.P. Lees *et al.* (BABAR Collaboration), “ B^0 meson decays to $\rho^0 K^{*0}$, $f_0 K^{*0}$, and $\rho^- K^{*+}$, including higher K^* resonances,” *Phys. Rev.* **D85**, 072005 (2012), [arXiv:1112.3896 \[hep-ex\]](#)
- [66] J.P. Lees *et al.* (BABAR Collaboration), “Search for lepton-number violating processes in $B^+ \rightarrow h^- l^+ l^+$ decays,” *Phys. Rev.* **D85**, 071103 (2012), [arXiv:1202.3650 \[hep-ex\]](#)
- [67] J.P. Lees *et al.* (BABAR Collaboration), “Amplitude analysis and measurement of the time-dependent CP asymmetry of $B^0 \rightarrow K_S^0 K_S^0 K_S^0$ decays,” *Phys. Rev.* **D85**, 054023 (2012), [arXiv:1111.3636 \[hep-ex\]](#)
- [68] J.P. Lees *et al.* (BABAR Collaboration), “Search for the $Z_1(4050)^+$ and $Z_2(4250)^+$ states in $\bar{B}^0 \rightarrow \chi_{c1} K^- \pi^+$ and $B^+ \rightarrow \chi_{c1} K_S^0 \pi^+$,” *Phys. Rev.* **D85**, 052003 (2012), [arXiv:1111.5919 \[hep-ex\]](#)
- [69] J.P. Lees *et al.* (BABAR Collaboration), “Search for $\bar{B} \rightarrow \Lambda_c^+ X l^- \nu$ Decays in Events With a Fully Reconstructed B Meson,” *Phys. Rev.* **D85**, 011102 (2012), [arXiv:1110.6005 \[hep-ex\]](#)