

Hadronic B to charm decays

Section Editors



BaBar: Richard Kass

Theory: Martin Beneke

I am just getting up to speed.....

Includes: Branching fractions & angular distributions

$B \rightarrow D^0/\bar{D}^0 X$ $B \rightarrow D^+/D^- X$

$B \rightarrow D^{*0}/\bar{D}^{*0} X$ $B \rightarrow D^{*+}/D^{*-} X$

+ other D and D^* states (D_0^* , D_1 , etc)

$B \rightarrow D_s X$ $B \rightarrow D_s^* X$
+ other D_s and D_s^* states (D_{s0}^* , D_{s1} , etc)

$B \rightarrow$ charmonium (η_c , J/ψ , χ)X

Does not include CPV analyses....

Hadronic B to charm decays

Organization

PDG10 is organized in terms of charged & neutral B 's:

For charged B 's the PDG is organized:

D, D^* or D_s modes: Γ_{41} - Γ_{172} only mesons decay products

Charmonium modes: Γ_{173} - Γ_{229}

Baryon modes: Γ_{405} - Γ_{424} A few modes contain charm
 $\Gamma_{405} D^+ p \bar{p}$ $\Gamma_{417} \Lambda_c^+ \bar{\Lambda}_c^- K^+$

About 200 different modes (Γ 's) are listed for charged B 's!

Other organizational possibilities:

Final states with 1-charm particle ($D\pi$), 2-charm particles (DD^*)

Two body modes (e.g. $D\pi$), 3-body modes (e.g. $D\pi\pi$), etc

“Theory based”

According to amplitude (color favored, color suppressed, etc)

Am looking at charmless & baryonic B decays sections for guidance

Hadronic B to charm decays

Papers

There are a lot of papers on the subject from Belle/BaBar!
list of BaBar & Belle papers in “extra slides” (11 pages)

By the numbers from the BaBar/Belle public pages:

	PRL	PRD/PRD-RC	PLB	~20% of published papers...
BaBar	22	44	0	
Belle	27	34	5	
Total	49	78	5	

The trend is to publish long(er) papers in PRD with several modes

A few papers on the websites are submitted and not yet published

There are also new papers in the pipeline....

Some Issues:

Some BFs have been measured several times by BaBar/Belle ($B \rightarrow D^0 K^*$)

Some modes may be shared or belong to another PBF group:

charm baryons: “Study of inclusive B^- and \bar{B}^0 decays to flavor-tagged D , D_s and Λ_c^+ ”

radiative decays: “Search for the rare decay $B0\bar{b} \rightarrow D^*0 \gamma$ ”

Hadronic B to charm decays



Section layout

Section (Title)

Subsection (Title)

Subsubsection (Title)

Text

intro section detailing reasons that these decays are important
theory section describing models of hadronic B decays
subsections on modes (e.g. single charm, double charm,...)

Planned tables and figures:

YES, several tables of branching fractions necessary

 include theoretical predictions where they exist

YES, a few figures to serve as examples would be useful

Approx. expected # pages needed for whole section:

Order of magnitude estimate: $10 < \# \text{ pages} < 100$

Go heavy on tables of BFs, light on the words...

Hadronic B to charm decays



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Inter-correlations
definitely!

charm baryons

CPV

new states ($X(3872)\dots$)

Section (Title)
(Subsection (Title))
(Subsubsection (Title))
(Paper (Reference))

related to

Section (Title)

Foreseen resolution:
cross-referencing?
division of topics?

...

Section (Title)
(Subsection (Title))
(Subsubsection (Title))
(Paper (Reference))

related to

Section (Title)

Foreseen resolution:
cross-referencing?
division of topics?

...

Hadronic B to charm decays

Contributors

Confirmed (beside section editors)

BaBar: Names

Belle: Names

Un-confirmed

BaBar: #

Belle: #



Suggestions welcome

Have already received several suggestions and am following up....

Hadronic B to charm decays

Comments

This is section a work in progress.

First coming to grips the scope & amount of information available
some unresolved issues with organization of this section

Need to compact a lot of info into a reasonable space....

Need to contact Martin Beneke

Adding a Belle person would be helpful



Extra Slides..

Submitted BaBar Papers: From BaBar Public Website-I

https://oraweb.slac.stanford.edu/pls/slacquery/BABAR_DOCUMENTS.DISPATCH?P_TYPE=7&QFCN=INDEX

[PUB-10/018](#) Measurement of $B \rightarrow D^{(*)}D^{(*)}K$ Branching Fractions PRD 83, 032004 (2011)

[PUB-10/001](#) Search for $B^+ \rightarrow D^+ K^*_0$ and $B^+ \rightarrow D^+ K^*0$ decays PRD 82, 092006 (2010)

[PUB-08/048](#) Dalitz Plot Analysis of $B^- \rightarrow D^+ \pi^- \pi^-$ PRD 79, 112004 (2009)

[PUB-08/034](#) Observation of $B^0 \rightarrow \chi_{c0} K^*0$ and evidence for $B^+ \rightarrow \chi_{c0} K^*+$ PRD-RC 78, 091101 (2008)

[PUB-08/030](#) Evidence for $X(3872) \rightarrow \psi(2S) \gamma$ in $B^{+/-} \rightarrow X(3872) K^{+/-}$ Decays, and a Study of $B \rightarrow c\bar{c} \gamma K$ PRL 102, 132001 (2009)

[PUB-08/009](#) Measurement of the branching fractions of the rare decays $B^0 \rightarrow D_s^{(*)} \pi^-$, $B^0 \rightarrow D_s^{(*)} \rho^-$, and $B^0 \rightarrow D_s^{(*)} K^{(*)} +$ PRD 78, 032005 (2008)

[PUB-08/008](#) Study of B -meson decays to $\eta_c K^{(*)}$, $\eta_c(2S) K^{(*)}$ and $\eta_c \gamma K^{(*)}$ PRD 78, 012006 (2008)

[PUB-08/007](#) Study of $B \rightarrow X(3872) K$, with $X(3872) \rightarrow J/\psi \pi^+ \pi^-$ PRD-RC 77, 111101 (2008)

[PUB-07/049](#) Study of resonances in exclusive B decays to $D\bar{b}^{(*)} D^{(*)} K$ PRD-RC 77, 011102 (2008)

[PUB-07/044](#) Observation of $Y(3940) \rightarrow J/\psi \omega$ in $B \rightarrow J/\psi \omega K$ at BABAR PRL 101, 082001 (2008)

Submitted BaBar Papers: From BaBar Website-II

- [PUB-07/017](#) Branching fraction and charge asymmetry measurements in $B \rightarrow J/\psi \pi \pi$ decays PRD-RC 76, 031101 (2007)
- [PUB-07/009](#) Measurement of decay amplitudes of $B \rightarrow J/\psi K^*$, $\psi(2S) K^*$, and $\chi_{c1} K^*$ with an angular analysis PRD-RC 76, 031102 (2007)
- [PUB-06/066](#) Evidence for the Rare Decay $B^+ \rightarrow D_s^+ \pi^0$ PRL 98, 171801 (2007)
- [PUB-06/057](#) Measurement of the absolute branching fractions $B \rightarrow D \pi$, $D^* \pi$, $D^{**} \pi$ with a missing mass method PRD-RC 74, 111102 (2006)
- [PUB-06/046](#) Branching fraction measurement of $B^0 \rightarrow D^{(*)+} \pi^-$ and $B^- \rightarrow D^{(*)0} \pi^-$ and isospin analysis of $B^0 \rightarrow D^{(*)} \pi$ decays PRD-RC 75, 031101 (2007)
- [PUB-06/041](#) Search for $B^+ \rightarrow X(3872) K^+$, $X(3872) \rightarrow J/\psi \gamma$ PRD-RC 74, 071101 (2006)
- [PUB-06/026](#) Observation of Decays $B^0 \rightarrow D_s^{(*)+} \pi^-$ and $B^0 \rightarrow D_s^{(*)-} K^+$ PRL 98, 081801 (2007)
- [PUB-06/021](#) Study of the decay $B^0 \rightarrow D^{*+} \omega \pi^-$ PRD 74, 012001 (2006)
- [PUB-06/020](#) Study of inclusive B^- and \bar{B}^0 decays to flavor-tagged D , D_s and Λ_c^+ PRD 75, 072002 (2007)
- [PUB-06/018](#) Study of $B \rightarrow D^{(*)} D_s(J)(*)$ decays and measurement of D_s^- and $D_s J(2460)^-$ branching fractions PRD-RC 74, 031103 (2006)
- [PUB-06/014](#) Measurement of branching fractions and CP-violating charge asymmetries for B^- meson decays to $D^{(*)} D^{(*)\bar{}}_s$, and implications for the CKM angle γ PRD 73, 112004 (2006)

Submitted BaBar Papers: From BaBar Website-III

- [PUB-06/013](#) Measurements of the decays $B_0 \rightarrow D^0 \bar{p} p$, $B_0 \rightarrow D^* \bar{p} p$, $B_0 \rightarrow D^- \bar{p} p$, and $B_0 \rightarrow D^{*-} \bar{p} p$ PRD-RC 74, 051101 (2006)
- [PUB-06/003](#) Measurement of the $B^- \rightarrow D^0 K^*$ - branching fraction PRD-RC 73, 111104 (2006)
- [PUB-06/002](#) Measurement of $B_0 \bar{p} \rightarrow D^{(*)0} K^{(*)0}$ branching fractions PRD-RC 74, 031101 (2006)
- [PUB-05/054](#) Measurements of the branching fraction and time-dependent CP asymmetries of $B_0 \rightarrow J/\psi \pi^0$ decays PRD-RC 74, 011101 (2006)
- [PUB-05/048](#) Search for the rare decays $B_0 \rightarrow D_s^{(*)+} a_0(2)^-$ PRD-RC 73, 071103 (2006)
- [PUB-05/047](#) Search for rare quark-annihilation decays, $B^- \rightarrow D_s^{(*)-} \phi$ PRD-RC 73, 011103 (2006)
- [PUB-05/044](#) Search for the W-exchange decays $B_0 \rightarrow D_s^{(*)-} D_s^{(*)+}$ PRD-RC 72, 111101 (2005)
- [PUB-05/043](#) Measurement of Branching Fractions and Resonance Contributions for $B_0 \rightarrow D^0 \bar{K}^+$ and $B_0 \rightarrow D^0 K^-$ Decays PRL 96, 011803 (2006)
- [PUB-05/041](#) Measurements of the Absolute Branching Fractions of $B^{+-} \rightarrow K^{+-} X_{cc\bar{c}}$ PRL 96, 052002 (2006)
- [PUB-05/038](#) Study of the $X(3872)$ and $Y(4260)$ in $B_0 \rightarrow J/\psi \pi^+ \pi^- K^0$ and $B^- \rightarrow J/\psi \pi^+ \pi^- K^-$ decays PRD-RC 73, 011101 (2006)
- [PUB-05/016](#) Measurement of the branching fraction and decay rate asymmetry of $B^- \rightarrow D_{\{\pi^+\pi^-\}} K^-$ PRD-RC 72, 071102 (2005)
- [PUB-05/014](#) Search for the rare decays $B^+ \rightarrow D^{(*)+} K_0 s$ 31PRD-RC 72, 011102 (2005)

Submitted BaBar Papers: From BaBar Website-IV

[PUB-05/009](#) Search for the rare decay $B^0\bar{B} \rightarrow D^*0\gamma$ PRD-RC 72, 051106 (2005)

[PUB-05/005](#) Search for $B \rightarrow J/\psi D$ decays PRD-RC 71, 091103 (2005)

[PUB-05/002](#) Measurement of the $B^0 \rightarrow D^{*-} D_s^{*+}$ and $D_s^+ \rightarrow \phi \pi^+$ branching fractions PRD-RC 71, 091104 (2005)

[PUB-04/046](#) Search for Factorization-Suppressed $B \rightarrow \chi_c K^(*)$ Decays PRL 94, 171801 (2005)

[PUB-04/044](#) Measurement of Branching Fractions and Charge Asymmetries for Exclusive B Decays to Charmonium PRL 94, 141801 (2005)

[PUB-04/043](#) Search for a charged partner of the $X(3872)$ in the B meson decay $B \rightarrow X^- K, X^- \rightarrow J/\psi \pi^-, \pi^0$ PRD-RC 71, 031501 (2005)

[PUB-04/040](#) Measurement of Branching Fractions and Dalitz Distributions for $B^0 \rightarrow D^{(*)+-} K^0 \pi^+$ Decays PRL 95, 171802 (2005)

[PUB-04/033](#) Measurement of Branching Fractions for Inclusive B^- and $B^0\bar{B}$ Decays to Flavor-tagged D, D_s and Λ_c PRD-RC 70, 091106 (2004)

[PUB-04/026](#) Measurement of the ratio $B(B^- \rightarrow D^*0 K^-)/B(B^- \rightarrow D^*0 \pi^-)$ and of the CP asymmetry of $B^- \rightarrow D^*0 \{CP+\} K^-$ decays PRD-RC 71, 031102 (2005)

[PUB-04/024](#) Study of B to $D_{SJ}^{(*)} + \bar{D}$ Decays PRL 93, 181801 (2004)

[PUB-04/011](#) Study of the $B^- \rightarrow J/\psi K^- \pi^+ \pi^-$ decay and measurement of the $B^- \rightarrow X(3872) K^-$ branching fraction. PRD-RC 71, 071103 (2005)

[PUB-03/047](#) Observation of the Decay $B \rightarrow J/\psi \eta K$ and Search for $X(3870) \rightarrow J/\psi \eta$ PRL 93, 041801 (2004)

Submitted BaBar Papers: From BaBar Website-V

- [PUB-03/043](#) Branching Fraction Measurements of $B \rightarrow \eta_c K$ decays PRD-RC 70, 011101 (2004)
- [PUB-03/042](#) Study of $B^{+-} \rightarrow J/\psi \pi^{+-}$ and $B^{+-} \rightarrow J/\psi K^{+-}$ Decays: Measurement of the Ratio of Branching Fractions and Search for Direct CP Violation PRL 92, 241802 (2004)
- [PUB-03/035](#) Measurement of the branching fraction for $B^- \rightarrow D^0 K^-$ PRD-RC 69, 051101 (2004)
- [PUB-03/032](#) Measurement of $B^- \rightarrow D^0_{(CP)} K^-$ decays with the BaBar detector PRL 92, 202002 (2004)
- [PUB-03/026](#) Measurement of the Branching Fraction for $B^+ \rightarrow \chi_{c0} K^+$ -PRD-RC 69, 071103 (2004)
- [PUB-03/024](#) Measurement of the Branching Fraction and Polarization for the Decay $B^- \rightarrow D^*0 K^+$ -PRL 92, 141801 (2004)
- [PUB-03/020](#) Measurement of Branching Fractions of Color-Suppressed Decays of the B_0 Meson to $D^{(*)0} \pi^0$, $D^{(*)0} \eta$, $D^{(*)0} \omega$, and $D^0 \eta_c$ PRD 69, 032004 (2004)
- [PUB-03/016](#) Measurement of wrong-flavor to right-flavor amplitude ratio in $B \rightarrow J/\psi K^*$ PRL 93, 081801 (2004)
- [PUB-03/010](#) Measurement of the Branching Fractions for the Exclusive Decays of B^0 and B^+ to $D^{(*)} D^{(*)} K$ PRD 68, 092001 (2003)
- [PUB-03/007](#) Evidence for the decay $B^+ \rightarrow J/\psi p \Lambda$ and search for $B^0 \rightarrow J/\psi p \bar{p}$ PRL 90, 231801 (2003)
- [PUB-03/004](#) Measurement of the branching fraction and CP-violating asymmetries in $B^0 \rightarrow D^* D$ decays PRL 90, 221801 (2003)
- [PUB-03/001](#) $B^0 \rightarrow D_s^{(*)} + D^*-$ Branching Fractions and Polarization with a Partial Reconstruction Technique PRD-RC 67, 092003 (2003)
- [PUB-02/010](#) A study of the rare decays $B^0 \rightarrow D_s^{(*)+} \pi^-$ and $B^0 \rightarrow D_s^{(*)+} K^-$ PRL 90, 181803 (2003)

Submitted BaBar Papers: From BaBar Website-VI

- [PUB-02/007](#) Rare B decays to states containing a J/psi meson PRL 91, 071801 (2003)
- [PUB-02/006](#) A measurement of the $B^0 \rightarrow J/\psi \pi^+\pi^-$ branching fraction PRL 90, 091801 (2003)
- [PUB-02/004](#) Study of Inclusive Production of Charmonium Mesons in B Decay PRD 67, 032002 (2003)
- [PUB-01/024](#) Measurement of the branching fraction and CP content for the decay $B^0 \rightarrow D^{*+}D^{*-}$ PRL 89, 061801 (2002)
- [PUB-01/017](#) Measurement of D_s^+ and D_s^{*+} production in B meson decays and from continuum e+e- annihilation at $\sqrt{s}=10.6$ GeV PRD-RC 65, 091104 (2002)
- [PUB-01/014](#) Measurement of the ratio of branching fractions $BF(B^{+/-} \rightarrow J/\psi \pi^{+/-})/BF(B^{+/-} \rightarrow J/\psi K^{+/-})$ PRD-RC 65, 091101 (2002)
- [PUB-01/007](#) Measurement of branching fractions for exclusive B decays to charmonium final states PRD 65, 032001 (2002)
- [PUB-01/005](#) Measurement of the $B \rightarrow J/\psi K^*(892)$ decay amplitudes PRL 87, 241801 (2001)

Submitted Belle Papers: From Belle Public Website-I

http://belle.kek.jp/bdocs/b_journal.html

- 341 Study of $B^\pm \rightarrow K^\pm(K_S K\pi)^0$ Decay and Determination of η_c and $\eta_c(2S)$ Parameters
- 340 Observation of $X(3872) \rightarrow J/\psi \gamma$ and search for $X(3872) \rightarrow \psi' \gamma$ in B decays
- 337 Evidence for the Suppressed Decay $B^- \rightarrow DK$, $D \rightarrow K^+\pi^-$ [PRL 106, 231803 \(2011\)](#)
- 336 Observation of $B_s^0 \rightarrow J/\psi f_0(980)$ and Evidence for $B_s^0 \rightarrow J/\psi f_0(1370)$ [PRL 106, 121802 \(2011\)](#)
- 335 Study of the decays $B \rightarrow D_{s1}(2536)^+ + \text{anti-}D^{(*)}$ [PRD 83, 051102\(R\) \(2011\)](#)
- 327 Study of the $K^+ \pi^+ \pi^-$ Final State in $B^+ \rightarrow J/\psi K^+ \pi^+ \pi^-$ and $B^+ \rightarrow \psi'\pi^+ K^+ \pi^+$ [PRD 83, 032005\(2011\)](#)
- 323 Measurements of Branching Fractions for $B^0 \rightarrow D_s^+ \pi^-$ and $B^0 \bar{\rightarrow} D_s^+ K^-$ [PRD 82, 051103\(R\) \(2010\)](#)
- 304 Measurement of the branching fractions for $B^0 \rightarrow D_s^* \pi^-$ and $B^0 \rightarrow D_s^* K^+$ decays [PRD 81, 031101\(R\) \(2010\)](#)
- 302 Study of the $B \rightarrow X(3872)(\rightarrow D^* \bar{D}^0) K$ decay [PRD 81, 031103 \(2010\)](#)
- 285 Measurement of $B \rightarrow D_s(\ast) K \pi$ branching fractions [PRD 80, 052005 \(2009\)](#)
- 283 Improved measurement of the polarization and time-dependent CP violation in the decay $B^0 \rightarrow D^+ D^-$ [PRD 80, 111104\(R\) \(2009\)](#)
- 274 Evidence for $B^0 \rightarrow \chi_c 1 \pi^0$ at Belle [PRD\(RC\) 78, 091104 \(2008\)](#)
- 268 Observation of $B^+ \rightarrow \psi(2S) \pi^+$ and search for direct CP-violation [PRD\(RC\) 78, 051104 \(2008\)](#)
- 267 Observation of two resonance-like structures in the $\pi^+ \chi_c 1$ mass distribution in exclusive $B^0 \bar{\rightarrow} K^- \pi^+ \chi_c 1$ decays [PRD 78, 072004 \(2008\)](#)
- 262 Search for $B \rightarrow J/\psi \phi$ decays [PRD\(RC\) 78, 011106 \(2008\)](#)

Submitted Belle Papers: From Belle Website-II

- 258 Study of the Suppressed B meson Decay $B^- \rightarrow D^- K^-$, $D^- \rightarrow K^- \pi^-$ [PRD\(R\) 78, 071901 \(2008\)](#)
- 257 Search for $B^+ \rightarrow D^*+ \pi^0$ decay [PRL 101, 041601 \(2008\)](#)
- 253 Measurement of the branching fraction and charge asymmetry of the decay $B^+ \rightarrow D^+ D^0 \bar{D}$ and search for $B^0 \rightarrow D^0 D^0 \bar{D}$ [PRD\(R\) 77, 091101 \(2008\)](#)
- 227 Observation of a new $D_s J$ meson in $B^+ \rightarrow D^0 D^0 K^+$ decays [PRL 100, 092001 \(2008\)](#)
- 219 Measurement of Branching Fraction and Time-Dependent CP Asymmetry Parameters in $B^0 \rightarrow D^*+ D^*- K_s$ Decays [PRD 76, 072004 \(2007\)](#)
- 215 Observation of $B^0 \bar{D} \rightarrow D_s^+ \Lambda \bar{\Lambda}$ decay [PRD 76, 051102 \(2007\)](#)
- 208 Improved measurement of $B^0 \bar{D} \rightarrow D_s^- D^+$ and search for $B^0 \bar{D} \rightarrow D_s^+ D_s^-$ [PRD 75, 091102 \(2007\)](#)
- 195 Observation of the decay $B^0 \rightarrow J/\psi \eta$ [PRL 98, 131803 \(2007\)](#)
- 193 Study of $B^0 \bar{D} \rightarrow D^0 \pi^+ \pi^-$ decays [PRD 76, 012006 \(2007\)](#)
- 186 Study of decay mechanisms in $B^- \rightarrow \Lambda_c^+ \bar{D}$ and observation of anomalous structure in the $(\Lambda_c^+ \bar{D})$ system [PRL 97, 242001 \(2006\)](#)
- 184 Search for $B^+ \rightarrow J/\psi \eta' K^+$ and $B^0 \rightarrow J/\psi \eta' K_s$ Decays [PRD 75, 017101 \(2007\)](#)
- 180 Study of the charmed baryonic decays $B^0 \bar{D} \rightarrow \Sigma_c^+ \bar{D}$ and $B^0 \bar{D} \rightarrow \Sigma_c^0 \bar{D}$ [PRD\(RC\) 75, 011101 \(2007\)](#)
- 177 Improved Measurements of Color-suppressed Decays $B^0 \bar{D} \rightarrow D^0 \pi^0$, $D^0 \eta$, $D^0 \omega$, $D^{*0} \pi^0$, $D^{*0} \eta$ and $D^{*0} \omega$ [PRD 74, 092002 \(2006\)](#)
- 176 Observation of $B^+ \rightarrow \chi_{c1} \pi^+$ and Search for Direct CP Violation [PRD\(RC\) 74, 051103 \(2006\)](#)
- 175 Observation of near-threshold enhancement in the $D^0 D^0 \bar{D}$ invariant mass in $B \rightarrow D^0 D^0 \bar{D} \pi^0 K$ Decay [PRL 97, 162002 \(2006\)](#)

Submitted Belle Papers: From Belle Website-III

- 170 Search for the h_c meson in $B^+ \rightarrow h_c K^+$ [PRD 74, 012007 \(2006\)](#)
- 158 Study of $B^+ \rightarrow D_{CP} K^+$ and $D_{CP^*} K^+$ decays [PRD 73, 051106\(R\) \(2006\)](#)
- 157 Observation of $B^+ \rightarrow \Lambda_c^+ \Lambda_c^- K^+$ and $B^0 \rightarrow \Lambda_c^+ \Lambda_c^- K^0$ decays [PRL 97, 202003 \(2006\)](#)
- 150 Observation of $B^+ \rightarrow \Xi_c \bar{\Lambda}_c^+$ and Evidence for $B^0 \rightarrow \Xi_c^- \bar{\Lambda}_c^+$ [PRD\(RC\) 74, 111105](#)
- 147 Measurement of Branching Fractions for $B \rightarrow \chi_c(2) K(K^*)$ at Belle [PLB 634, 155 \(2006\)](#)
- 143 Observation of $B^- \rightarrow J/\psi \Lambda \bar{p}$ and searches for $B^- \rightarrow J/\psi \Sigma^0 \bar{p}$ and $B^0 \rightarrow J/\psi p \bar{p}$ Decays [PRD 72, 051105\(R\) \(2005\)](#)
- 141 Charm Hadrons from Fragmentation and B decays in e^+e^- Annihilation at $\sqrt{s} = 10.6$ GeV [PRD 73, 032002 \(2006\)](#)
- 128 Search for $B^0 \rightarrow J/\psi D^0 \bar{p}$ and $B^+ \rightarrow J/\psi D^0 \pi^+$ decays [PRD 71, 091107\(R\) \(2005\)](#)
- 121 Evidence for $B^0 \rightarrow D^+ D^-$ and Observation of $B^- \rightarrow D^0 D^-$ and $B^- \rightarrow D^0 D^{*-}$ Decays [PRL 95, 041803 \(2005\)](#)
- 119 Branching Fraction, Polarization and CP-Violating Asymmetries in $B^0 \rightarrow D^{*+} D^{*-}$ Decays [PLB 618, 34 \(2005\)](#)
- 118 Observation of $B \rightarrow D^0 \eta'$ and $B \rightarrow D^{*0} \eta'$ [PRD 72, 011103\(R\) \(2005\)](#)
- 116 Observation of a near-threshold omega-J/psi mass enhancement in exclusive $B \rightarrow K \omega J/\psi$ decays [PRL 94, 182002 \(2005\)](#)
- 110 Study of the Suppressed Decays $B^- \rightarrow [K+\pi^-]_D K^-$ and $B^- \rightarrow [K+\pi^-]_D \pi^-$ [PRL 94, 091601\(2005\)](#)
- 108 Observation of $B^0 \rightarrow D_s J^*(2317)^+ K^-$ decay [PRL 94, 061802\(2005\)](#)

Submitted Belle Papers: From Belle Website-IV

- 102 Observation of $B^0 \rightarrow D^*-(5\pi)^+$, $B^+ \rightarrow D^*-(4\pi)^{++}$ and $B^+ \rightarrow \bar{D}^*0(5\pi)^+$ [PRD\(R\)70, 111103\(2004\)](#)
- 81 Observation of $B^+ \rightarrow \psi(3770) K^+$ [PRL93,051803\(2004\)](#)
- 71 Search for $B^- \rightarrow J/\psi \Lambda \bar{\Lambda}$ [PRD 69, 017101 \(2004\)](#)
- 65 Observation of $D_s J(2317)$ and $D_s J(2457)$ in B decays [PRL 91, 262002 \(2003\)](#)
- 63 Study of $B^- \rightarrow D^{**0} \pi^- (D^{**0} \rightarrow D^(*)^+ \pi^-)$ decays [PR D69, 112002 \(2004\)](#)
- 58 Measurement of branching fraction ratios and CP asymmetries in $B^{*-} \rightarrow D^* \bar{K}^+$ [PRD 68, 051101 \(2003\)](#)
- 53 Observation of $B^0 \bar{B}^0 \rightarrow D^0 \bar{K}^0$ and $B^0 \bar{B}^0 \rightarrow D^0 \bar{K}^* \bar{K}^0$ decays [PRL 90, 141802 \(2003\)](#)
- 52 Observation of $B^0 \bar{B}^0 \rightarrow \Lambda_c \bar{\Lambda}_c$ decay [PRL 90, 121802 \(2003\)](#)
- 49 Measurement of Branching Fractions and Charge Asymmetries for Two-Body B Meson Decays with Charmonium [PRD 67, 032003 \(2003\)](#)
- 48 Study of $B^0 \bar{B}^0 \rightarrow D^(*)^0 \pi^+ \pi^-$ Decays [PLB 553, 159 \(2003\)](#)
- 45 Measurement of Branching Fractions for $B \rightarrow \eta_c K^*$ Decays [PRL 90, 071801 \(2003\)](#)
- 44 Study of Exclusive B Decays to Charmed Baryons [PRD 66, 091102\(R\) \(2002\)](#)
- 40 Observation of $D_s^+ K^-$ and evidence for $D_s^+ \pi^-$ final states in neutral B decays [PRL 89, 231804 \(2002\)](#)
- 38 Observation of $B \rightarrow D^(*) K^- K^0(*)$ decays [PLB 542, 171 \(2002\)](#)
- 34 Studies of the Decay $B^{*-} \rightarrow D^* \bar{K}^+$ [PRL 90, 131803 \(2003\)](#)
- 32 Observation of the decay $B^0 \rightarrow D^{*-} D^* \pi^+$ [PRL 89, 122001 \(2002\)](#)
- 30 Observation of the $\eta_c(2S)$ in exclusive $B \rightarrow K \bar{K}$ $K^- \pi^+$ decays [PRL 89, 102001 \(2002\)](#)
- 28 Observation of $B^0 \bar{B}^0 \rightarrow D^(*)^0 p \bar{p}$ [PRL 89, 151802 \(2002\)](#)

Submitted Belle Papers: From Belle Website-V

- 26 Measurements of Branching Fractions and Decay Amplitudes in $B \rightarrow J/\psi K^*$ decays [PLB 538, 11 \(2002\)](#)
- 23 Observation of χ_{c2} Production in B-meson Decay [PRL 89, 011803 \(2002\)](#)
- 13 Observation of $B^+ \rightarrow \chi_{c0} K^+$ [PRL 88, 031802 \(2002\)](#)
- 11 Observation of Color-suppressed $B^0 \rightarrow D^0\pi^0$, $D^*\pi^0$, $D^0\eta$, and $D^0\eta'$ Decays [PRL 88, 052002 \(2002\)](#)
- 7 Observation of $B \rightarrow J/\psi K_1(1270)$ [PRL 87, 161601 \(2001\)](#)
- 6 Observation of Cabibbo suppressed $B \rightarrow D^{(*)}K^-$ decays at Belle [PRL 87, 111801 \(2001\)](#)