

updated on 2006-May-24(Wed)

WG2: B/D/K decays

WG2 mailing list: [flavlhc-wg2 at cern.ch](mailto:flavlhc-wg2@cern.ch)

List of interested people in the WG2 study groups

Study Groups:

- Contact persons for Study Groups are shown in [,].

The following Study Groups, joined by both experimentalists and theorists, on "benchmark modes" were organized in the second meeting.

- **Radiative Penguin Decays [Gambino; Golutvin]:**

b->sgamma, b->dgamma inclusive and exclusive

- LHCb - [Golutvin]
- BaBar - Bechtle, Sciolla, Playfer
- Belle - Nakao, Nishida, Ushiroda
- Theory - [Gambino], Feldmann, Misiak, Ball, Zwicky, Haisch

- **Electroweak Penguin Decays [Feldmann; Berryhill]:**

b->sll inclusive and exclusive

- LHCb - Koppenburg, Egede, Gibson
- ATLAS - Reznicek, Toms, Policchio
- BaBar - [Berryhill], Playfer, Eigen
- Belle - Ishikawa, Limosani, Nakao
- Theory - [Feldmann], Safir, Greub, Hiller, Colangelo, Mannel, Khodjamirian, Ball, Zwicky, Ligeti, De Fazio, Ferrandes, Zhu

- **Neutrino modes [Grossman; Iijima]:**

b ->svv, B ->tau v, D tau v

- BaBar - Robertson
- Belle - [Iijima], Ikado, Katayama
- Theory - [Grossman], Okada, Foster, Paradisi, Hurth, Wyler

- **Very rare decays [Nierste; Smizanska]:**

Bs,d ->mu mu, mu mu pi, mu mu gamma, (tautau)

- ATLAS - [Smizanska], Nikitine, Sivoklov, Eigen, Buanes
- CMS - Speer, Langenegger, Starodumov
- CDF - Herndon, Lin
- D0 - Ay

- LHCb - (tba)
 - BaBar - Robertson
 - BELLE - Hazumi
 - Theory - [Nierste], Dedes, Foster, Paradisi, Kao
- **UT angles (tree-dominated) [Soni; Bona; Trabelsi; Wilkinson]:**
 - beta or ϕ_1 : $B_d \rightarrow \psi KS$, ...
 - alpha or ϕ_2 : $B \rightarrow \rho \pi$, $\pi \pi$, $\rho \rho$
 - gamma or ϕ_3 : $B_d, u \rightarrow DK$ -Dalitz, $B_s \rightarrow D_s K$, $B_d \rightarrow \pi \pi$ / $B_s \rightarrow K K$
 - Belle - [Trabelsi], Gershon, Ishino, Itoh, Miyabayashi
 - Babar - [Bona], Bevan, Gritsan, Malcles, Pierini, Cavoto, Eigen
 - LHCb - [Wilkinson], Deschamps, Lazzeroni, Patel, Gibson
 - CDF - Punzi
 - Theory - [Soni], Vysotski, Fleischer, Franco
- **Bs-Bsbar mixing [Lubicz; van Hunen]:**

Mass difference Δm_s , weak phase ϕ_s , lifetime difference $\Delta \Gamma / \Gamma$

$B_s \rightarrow D_s \pi$, $B_s \rightarrow J/\psi \phi$, ...

 - CDF - Kroll, Bedeschi, Oldeman
 - D0 - Ay
 - LHCb - [van Hunen], Fernandez
 - CMS - Speer, Starodumov
 - ATLAS - Catmore, Bouhova
 - Belle - Kinoshita, Drutskoy
 - Theory - [Lubicz], Lenz, Nierste, Guadagnoli
- **b->s and b->d hadronic transitions [Ciuchini; Muheim]:**

$B_d \rightarrow \phi KS$, $\eta' KS$, $B_s \rightarrow \phi \phi$, $B_d \rightarrow \pi \pi / B_s \rightarrow K K$, $B_d \rightarrow \rho \pi$, $\pi \pi$, $\rho \rho$, πK

 - Babar - Gritsan, Dujimic, Pierini
 - Belle - Hara, Sumisawa, Tajima, Hazumi, Krizan
 - LHCb - [Muheim], Gibson
 - Theory - [Ciuchini], Beneke, Fleischer, Safir, Jaeger, Ajaltouni
- **Kaon decays [Buras; Komatsubara]:**

$K \rightarrow \pi \nu \nu$, $KL \rightarrow \pi 0 \ell \ell$

 - NA48/III - Ruggiero, Ceccucci
 - J-PARC - [Komatsubara]
 - Theory - [Buras], Haisch, Isidori, Smith, Trine, Mescia, De Fazio
- **Charm decays [Fajfer; Asner]**

D^0 - D^0 bar mixing, D rare decays

 - CLEOc - [Asner], Stone, Briere
 - BaBar - Cavoto
 - CDF - Campanelli
 - LHCb - (tba)
 - Belle - Golob
 - TAC Charm Factory - Sultansoy
 - Theory - [Fajfer], Bigi

We also organize the following theory-oriented Study Groups.

- **New Physics; WG1/WG2 complementarity / Tools [Heinemeyer; Silvestrini; Parodi]**
- **New Physics Benchmarks [Isidori; Okada]**
- **Hadronic Uncertainties [Buchalla]**

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since 2006-March; *Takeshi K. Komatsubara (KEK-IPNS)*