The SuperB Project Update

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Outline

This workshop devoted to Physics Detector Computing

- Where we are with the approval process.
- Detector requirements for full exploitation of the collider potential.
- Site requirements and evaluation process

In Preparation of TDR

INFN/AE_10/2, LAL-1

SuperB
Progress Reports

Physics

arXiv:1008.1541v1

SuperB
Progress Reports

The Collider

arXiv:1007.4241

SuperB
Progress Reports

Physics
Accelerator
Detector

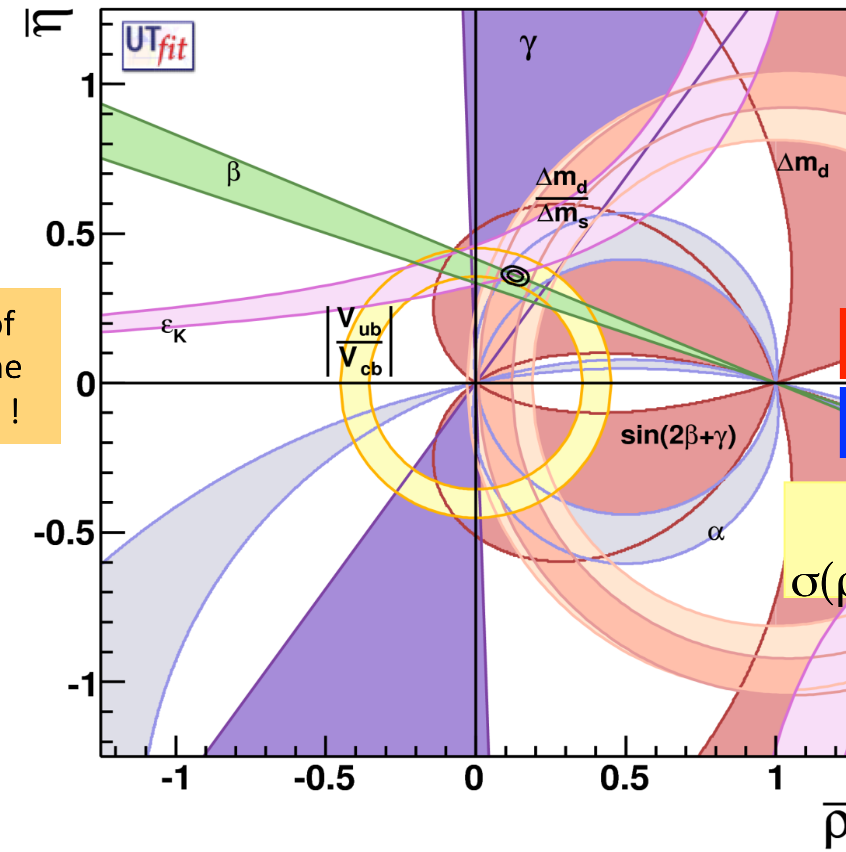
arXiv:1009.6178v1

Since September 2010 the three SuperB Progress Reports have been published, it was an important step forward to the completion of the TDR , in time during 2011. Machine parameters are fixed including the tunnel length , a Physics update after the 2008 Valencia document, the Detector is almost frozen.

Fit on Unitarity Triangle

Coherent picture of FCNC and CPV processes in SM

Consistence on an over constrained fit of the CKM parameters



Discovery : absence of New Particles up to the ~2×Electroweak Scale !

$\rho = 0.132 \pm 0.020$

$\eta = 0.358 \pm 0.012$

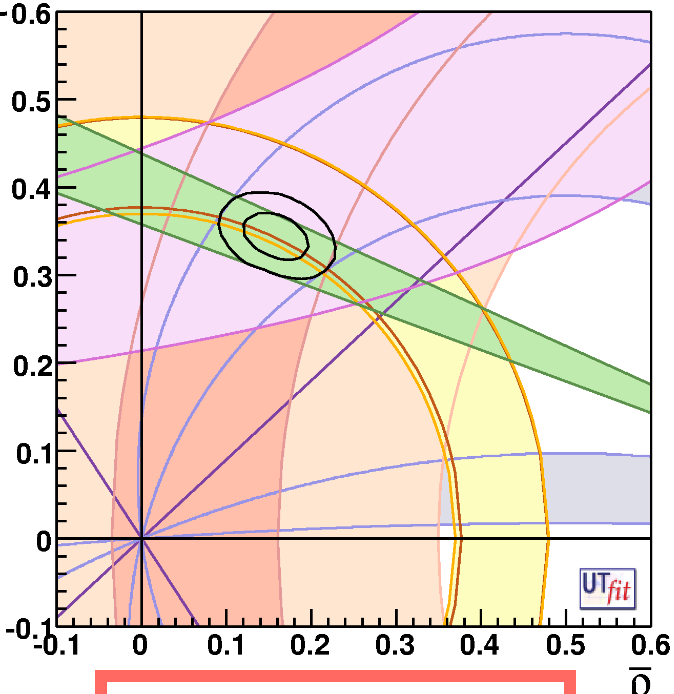
With a precision of $\sigma(\rho)$ ~15% and $\sigma(\eta)$ ~4% !

CKM matrix is the dominant source of flavour mixing and CP violation

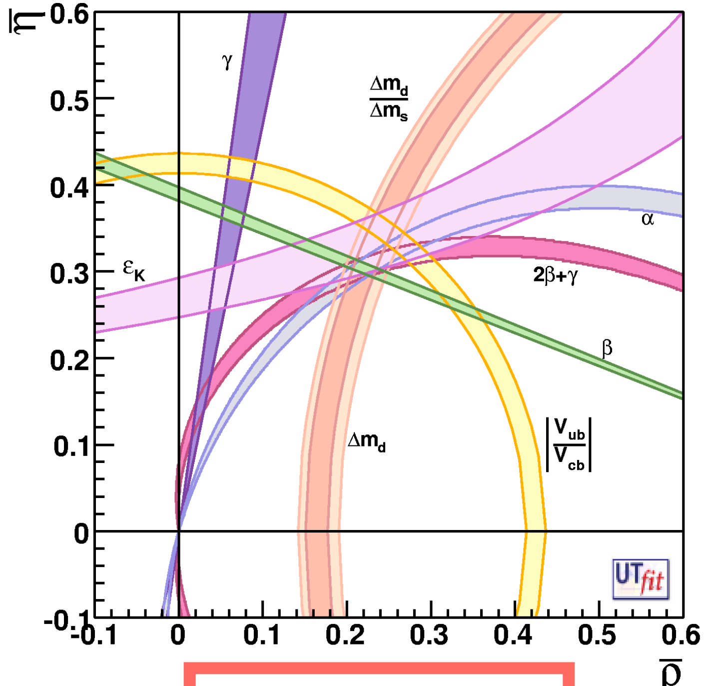
Determination of CKM parameters and New Physics

This situation will be different @2015 thanks to LHCb

Today



Future (SuperB) + Lattice improvements



$\rho = 0.163 \pm 0.028$
$\eta = 0.344 \pm 0.016$

→

$\rho = \pm 0.0028$
$\eta = \pm 0.0024$

players are :

$\gamma, \alpha, \beta.., V_{ub}$ and Lattice !

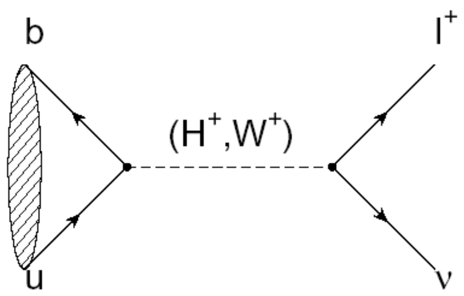
Improving CKM is crucial to look for NP

From A.Stocchi

Important also in K physics : $K \to \pi \nu \nu$, CKM errors dominated the error budget

Leptonic decay B → l ν

From A.Stocchi

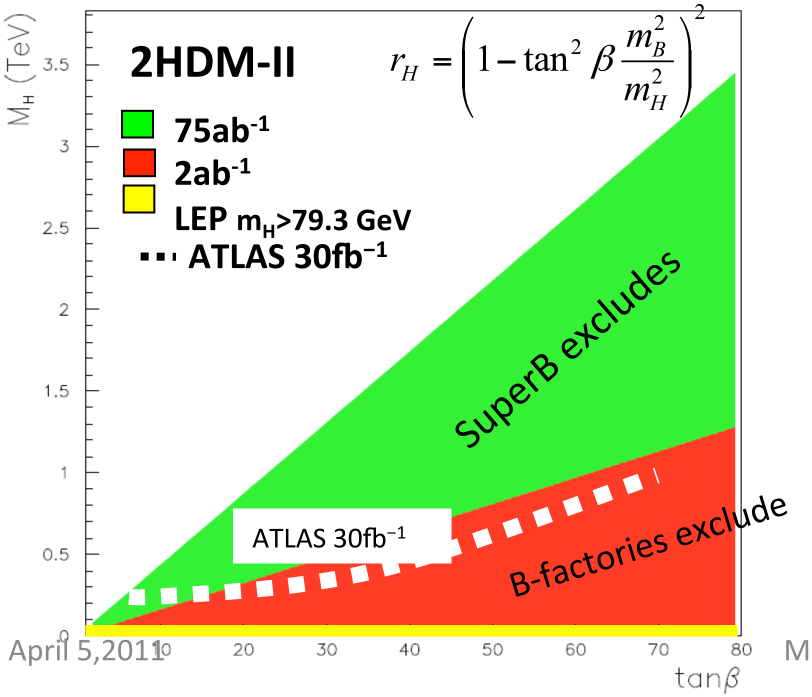


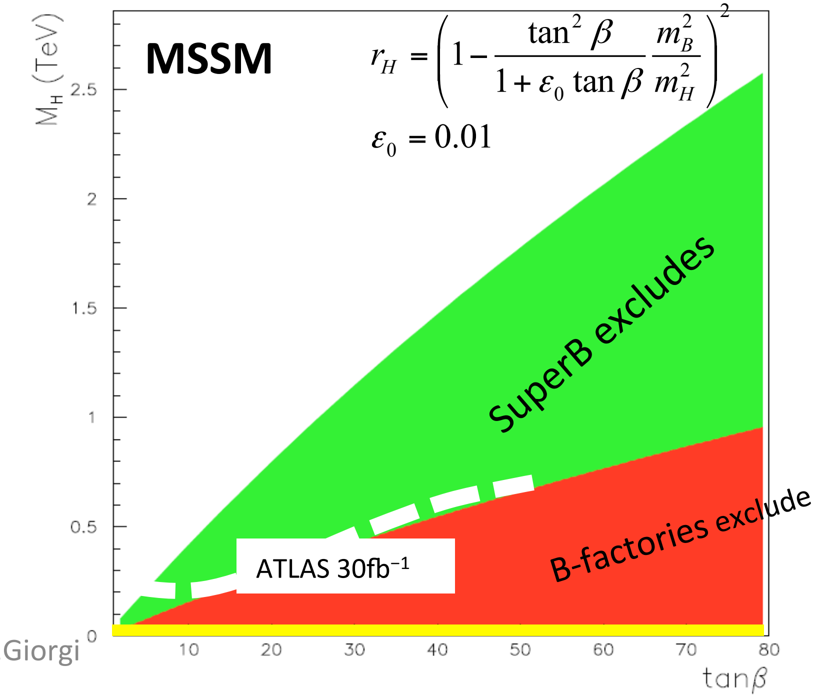
Observable	B Factories (2 ab^{-1})	SuperB
$\mathcal{B}(B \to \tau\nu)$	20%	4%
$\mathcal{B}(B \to \mu\nu)$	visible	5%
$\mathcal{B}(B \to D\tau\nu)$	10%	2%

$$\mathrm{BR}(B \to \tau\nu) = \mathrm{BR}_{SM}(B \to \tau\nu)\left(1 - \frac{m_B^2}{M_H^2}\tan^2\beta\right)^2$$

SuperB -75ab^{-1}

M_H~1.2-2.5 TeV for tanβ~30-60





SuperB is designed with 80% longitudinal polarization for e^-.

Polarization allows:

- Precision Measurement in ElectroWeak sector
- EDM and g-2 in τ .
- BKG reduction for LFV in τ .

- Polarized beams provide measurements of $\sin^2\theta_W(\text{eff})$ with comparable precision to SLD but at much lower energies.
- Polarization allows for NC Z-bb coupling measurement with better precision and different systematic w.r.t. LEP measurement of A_{FB}^b .

Differential Cross sections in $e^+e^- \to f^+f^-$

Diagrams	σ (nb)	A_{FB}	A_{LR} (Pol = 100%)
$\lvert Z+\gamma \rvert^2$	1.01	0.0028	-0.00051
$\lvert Z \rvert^2+\lvert \gamma \rvert^2$ No interference	1.01	0.0088	-0.00002

Interference term is $\sim g_A^e g_V^f$

Asymmetries at Z-pole for measured σ

$$A_{FB} = \frac{\sigma_F - \sigma_B}{\sigma_F + \sigma_B}$$

$$A_{LR} = \frac{\sigma_L - \sigma_R}{\sigma_L + \sigma_R} \frac{1}{\langle |\mathcal{P}_e| \rangle}$$

$$A_{LRFB} = \frac{(\sigma_F - \sigma_B)_L - (\sigma_F - \sigma_B)_R}{(\sigma_F + \sigma_B)_L + (\sigma_F + \sigma_B)_R} \frac{1}{\langle |\mathcal{P}_e| \rangle} .$$

at LEP: 15M hadronic Z decays, unpolarized

at SLC: 0.5M hadronic Z decays, polarized e^-

at SuperB: Z-term ~30M, polarized e^-

Expected stat. error: $\sigma(A_{LR}) = 4.6 \times 10^{-6}$

relative stat. error 1.1% (80% polarization).

Systematics <0.5% on polarization needed

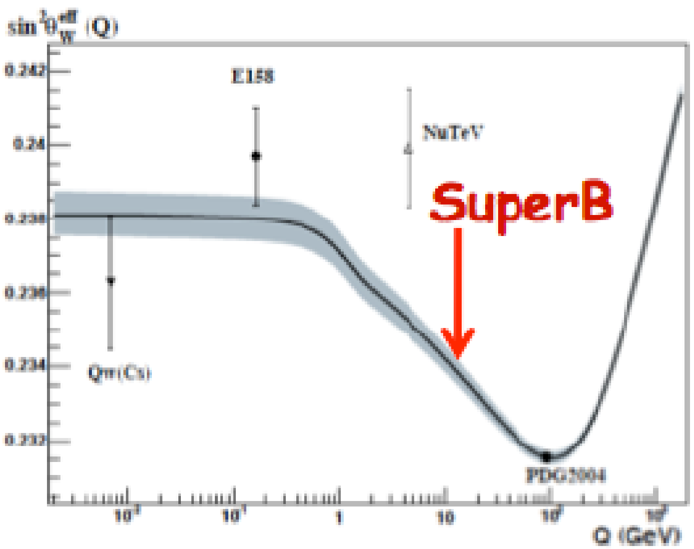
$$A_{LR} \propto g_V^f \propto (T_3^f - 2Q_f \sin^2 \theta_{eff}^f)$$

$\sigma(\sin^2\theta_{eff}) = 1.8 \times 10^{-4}$

cfr SLC $\sigma(\sin^2\theta_{eff}) = 2.6 \times 10^{-4}$

Electroweak measurement @ SuperB
POLARIZATION NEEDED

M.Roney et al.

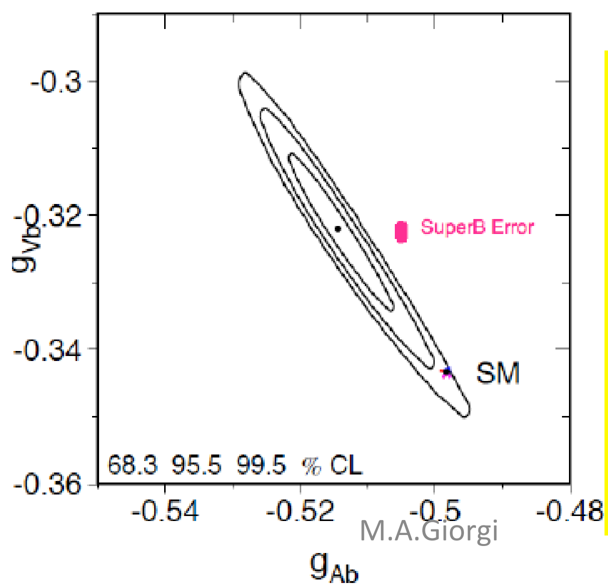


$$A_{LR} = \frac{\sigma(P)-\sigma(-P)}{\sigma(P)+\sigma(-P)} = \frac{16}{\sqrt{2}} \left(\frac{G_F q^2}{4\pi\alpha}\right) \left(\frac{g_A^e\, g_V^b}{Q_b}\right) P$$

- Measurable for all $B^0\,\bar{B}^0$ and $B^+\,B^-$ final states, both resonant and continuum.
- **All** QCD corrections included in the **single** form factor that cancels in the asymmetry.
- Very clean measurement, no **large** theoretical corrections (in progress...)

⇒ Excellent opportunity to measure g_V & $\sin^2\theta_W$ at SuperB with polarized beams!!

0.5% polarization syst.
0.3% stat. error
→ 0.0021



The L-R luminosity asymmetry has to be very well controlled.Possibly done using monitoring

using Bhabhas

Polarization should be measured better than .05%

luminosity dependent polarization affects systematic uncertainties

g-2 Reach (Valencia Report 2008)

Δa_μ is not in good agreement with SM

Measuring differential cross section of tau production would lead to measurement of the real part of tau form factor.

SPS	1a	1b	2	3	4	5
$\Delta a_\mu \times 10^{-9}$	3.1	3.2	1.6	1.4	4.8	1.1
$\Delta a_\tau \times 10^{-6}$	0.9	0.9	0.5	0.4	1.4	0.3

$$\frac{d\sigma}{d\cos(\theta)} = a \cdot \cos(\theta)^2 + b$$

$$a \propto \beta^2 |F_1|^2$$

$$b \propto (2-\beta^2) \cdot |F_1|^2 + 4\mathrm{Re}[F_2]$$

We began considering 1-3 prong whose experimental selection is cleaner

Need to tag the sample:

Lepton tag: higher purity & higher diluition (at least 3 neutrinos)

Hadronic tag: lower purity & lower diluition (2 neutrinos)

Systematics come mainly from tracking

Should be able to measure the real part $(0.75\text{-}1.7)\times 10^{-6}$

EXPERIMENT ⇓	Cross Section $Re\{F_2\}$	Normal Asymmetry $Im\{F_2\}$
Babar+Belle $2ab^{-1}$	4.6×10^{-6}	2.1×10^{-5}
Super B/Flavor Factory (1 yr. running) $15ab^{-1}$	1.7×10^{-6}	7.8×10^{-6}
Super B/Flavor Factory (5 yrs. running) $75ab^{-1}$	7.5×10^{-7}	3.5×10^{-6}

$\tau \to \mu\gamma$:Bkg extraplation (using BaBar analysis)

BaBar expects 5.1 events in the 2σ signal region

1.7 from lepton tags
1.4 from 3 hadron tags
2.0 from π+ρ tags

96% comes from real τ decays (86% from μννγ)

Bkg extrapolated to SuperB gives
300 events in the signal box.
It can be reduced thanks to:
Improved resolutions
Improved EMC coverage
~250 events expected

Background from taus is considered irreducible

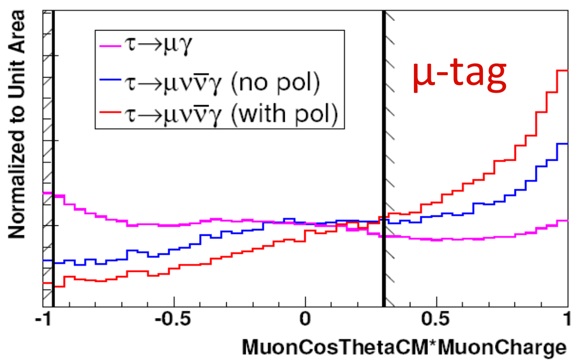
Need to reduce backgrounds to an acceptable level to scale better than $\sqrt{L}$

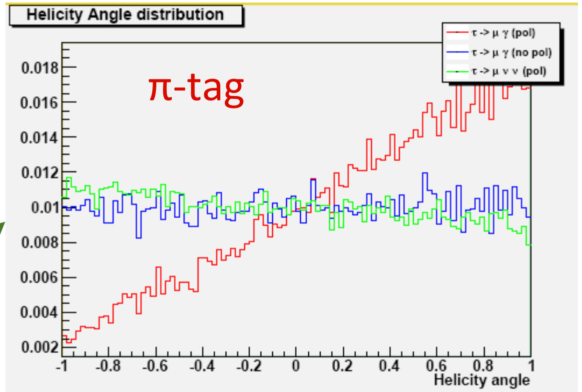
$\tau \to \mu\gamma$ with Polarization

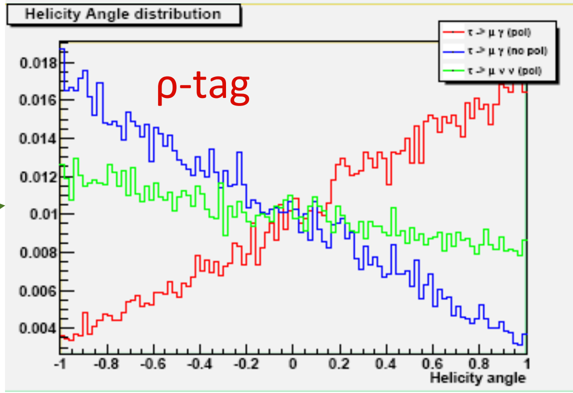
Using Polarization a more viable option is exploit hadron tags: only one ν in the event ⇒ fixed helicity

Signal helicity angle was studied for signal (both Polarized and Unpolarized) and backgrounds.

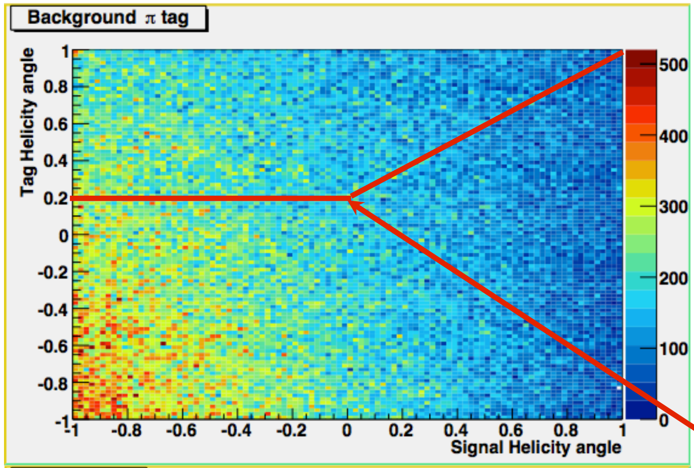
$$\theta_h = \tau^{tag}_{charge} \cdot \theta_{h-tag}$$

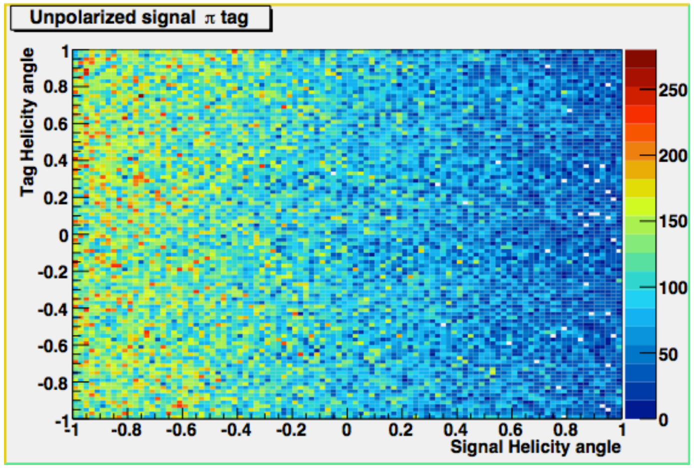


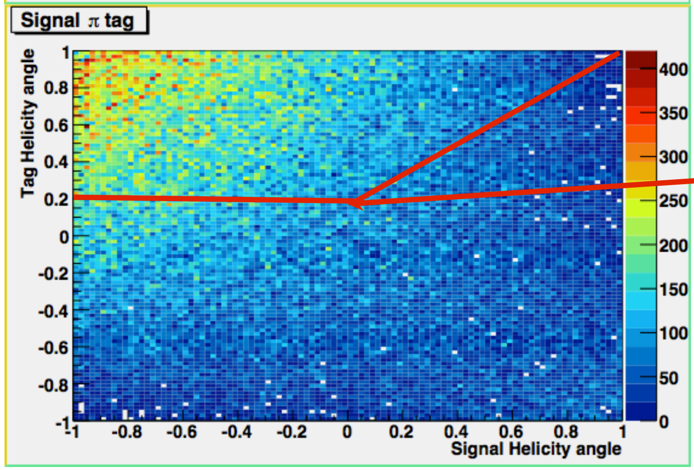




A simple analysis







Trapezoidal Cuts

eff. on signal:

41.6%π 49.4%ρ

bkg retained

11.5%π 9.8%ρ

Using polarization we obtain an improvement equivalent to a 2.6 increase in integrated Luminosity albeit using only 25% BF

Polarization Effects

BaBar Expected UL $8x10^{-8}$
scaling with √L (factor 12)
BaBar scaled Expected UL $6.4x10^{-9}$

Using Polarization background drops to O (15) events: UL scaling better than √L

Using a bayesian approach we may estimate an UL given the expected bkg

UL $3.9x10^{-9}$ using only ρ tag

Using polarization we obtain an improvement equivalent to a 2.6 increase in integrated Luminosity
albeit using only 25% BF

Further improvement adding all tags, but with some dilution.

Interest of running @ threshold

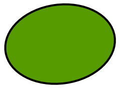
B. Meadow et al.

500 fb-1 at $\psi(3770)$

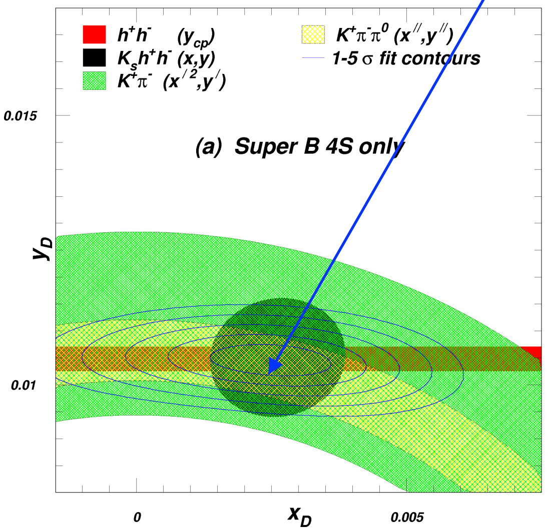
Decays of $\psi(3770) \to D^0 D^0$ produce coherent $(C=-1)$ pairs of D^0's. Quantum correlations in their subsequent decays allow measurements of strong phases

- Required for improved measurement of CKM γ
- Also required for D^0 mixing studies

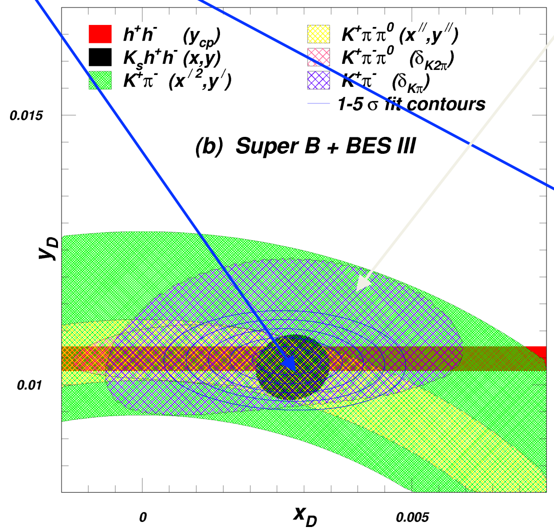
- Dalitz plot model uncertainty shrinks



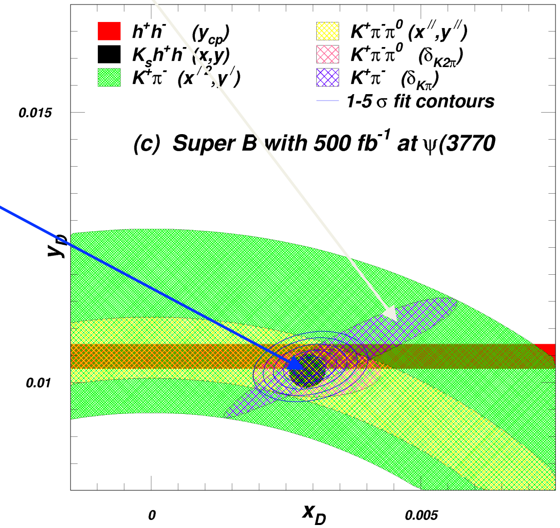
- Information on overall strong phase is added



Fit	$x \times 10^3$	$y \times 10^3$	$\delta^\circ_{K^+\pi^-}$	$\delta^\circ_{K^+\pi^-\pi^0}$
(b)	$xxx^{+0.72}_{-0.75}$	$xxx \pm 0.19$	$xxx^{+3.7}_{-3.4}$	$xxx^{+4.6}_{-4.5}$
Stat.	(0.18)	(0.11)	(1.3)	(2.9)



Fit	$x \times 10^3$	$y \times 10^3$	$\delta^\circ_{K^+\pi^-}$	$\delta^\circ_{K^+\pi^-\pi^0}$
(c)	$xxx \pm 0.42$	$xxx \pm 0.17$	$xxx \pm 2.2$	$xxx^{+3.3}_{-3.4}$
Stat.	(0.18)	(0.11)	(1.3)	(2.7)



Fit	$x \times 10^3$	$y \times 10^3$	$\delta^\circ_{K^+\pi^-}$	$\delta^\circ_{K^+\pi^-\pi^0}$
(d)	$xxx \pm 0.20$	$xxx \pm 0.12$	$xxx \pm 1.0$	$xxx \pm 1.1$
Stat.	(0.17)	(0.10)	(0.9)	(1.1)

Uncertainty in x_D improves more than that of y_D

Some Golden Modes

Red: No result | Orange: Moderate | Yellow: Precise | Green: Very Precise

Observable	Babar/ Belle	LHCb ($10fb^{-1}$)	SLHCb ($100fb^{-1}$)	SuperB ($75ab^{-1}$)	Some Comment	Theo
γ	Orange	Yellow	Green	Green		Green
V_{ub}/V_{cb}	Yellow	Orange	Orange	Green	Excl. needs Lattice & Inclusive @ 2% ?	Yellow
β	Yellow	Green	Green	Green	Theo. error to be controlled on data (ex: $J/\psi\pi^0$)	Green
$S(J/\psi\phi)$	Red	Green	Green	Red	At 1° theo error controlled with data ?	Green
$B \to \tau\nu, \mu\nu$	Orange	Red	Red	Yellow	Very precise if detector is improved	Yellow
S-Penguins	Orange	Orange	Orange	Green	SLHCb (very) precise for $B\to\phi K$, $Bs\to\phi\phi$ Not possible for $Ks\pi^0$,ksksks,ηks, ωKs..	Orange
$A_{CP}(B\to X_s\gamma)$	Yellow	Orange	Orange	Green	Control syst. Is an issue	Green
$Br(B\to X_s\gamma)$	Yellow	Orange	Orange	Green	Syst. Controlled with data ?	Orange
$Br(B\to X_s\, l\, l)$ *Angular var.*	Orange	Red	Red	Green		Green
$Br(B\to K^* l\, l)$, Angular var.	Orange	Yellow	Green	Green	Could theory control @20%? Angular analysis are clean ? →	Orange
$Br(B\to K^{(*)}\nu\nu)$	Red	Red	Red	Yellow	Stat. limited. With more stat. angular analyses also possible	Green
$Br(B\to K_s\pi^0\gamma)$	Orange	Red	Red	Green		Green
$Br(B_s\to\phi\gamma)$	Red	Yellow	Green	Red	As precise as Br $\to K_s\pi^0\gamma$) ?	Green
$Br(B_s\to\mu\mu)$	Red	Yellow	Green	Red		Green
$\tau\to\mu\gamma$	Orange	Red	Red	Yellow	profit of polarized beams	Green
CPV charm	Red	Yellow	Green	Green	CPV in SM negligible. So clean NP probe	Green

THEORY
- Orange: Moderately Clean
- Yellow: Clean Need Lattice
- Green: Clean

From A.Stocchi

Comparison Physics task Force

A task force has been set up to compare the physics reach of SuperB with the other Flavor Experiments:
LHCb, SuperBelle, Na62, MEG, Mu2e.

Super B is a SuperFlavor Factory and it is complementary to the other Flavor Experiments, all together they can prove New Physics beyond Standard Model.
Group leaded by :
A. Bevan, M.Ciuchini, A .Stocchi, B.Meadows, J.Walsh.

REPORT is expected by end May in the meeting of Elba.

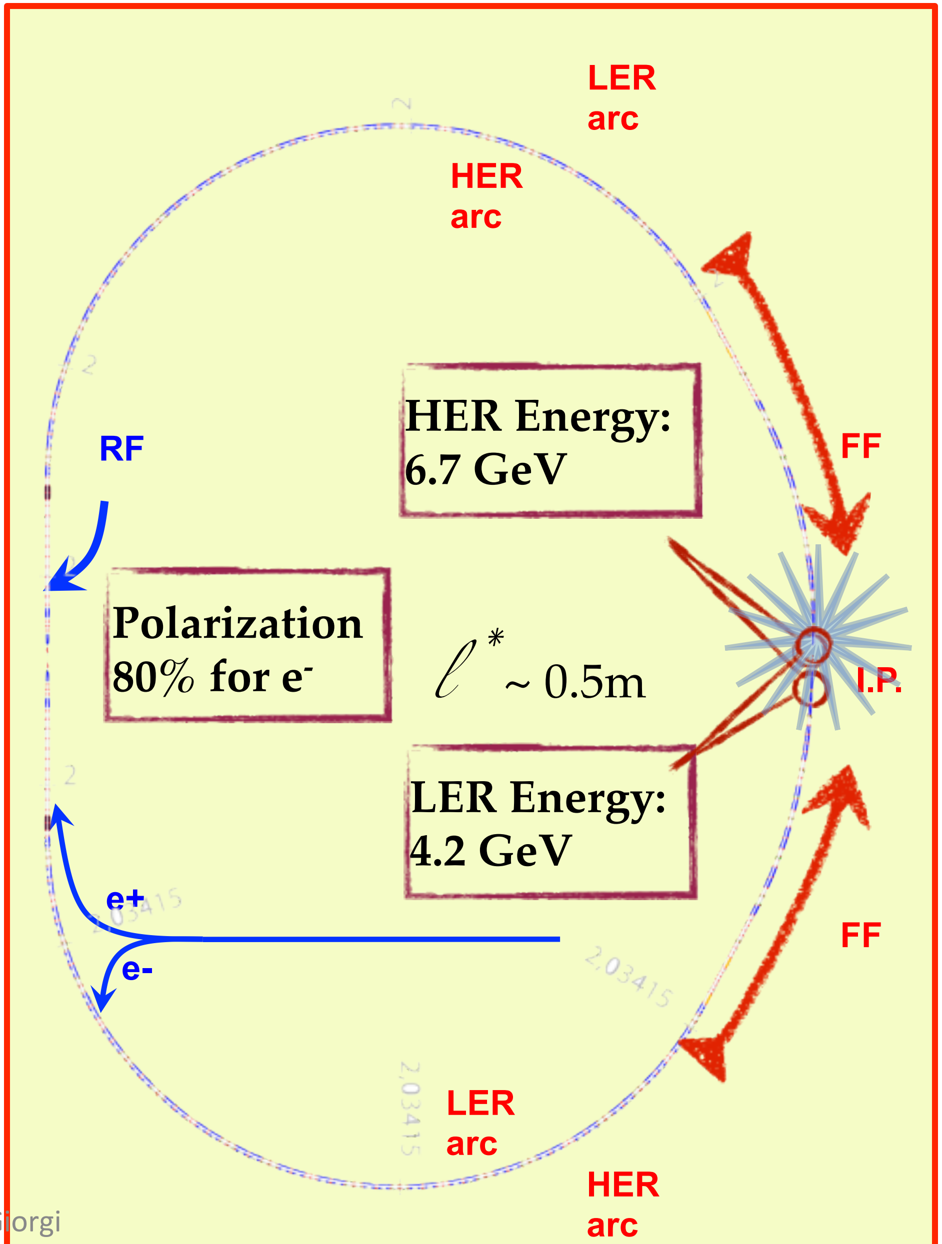
REQUIREMENTS FROM PHYSICS

Parameter	Requirement	Comment
Luminosity (top-up mode)	10^{36} cm^{-2}s^{-1} @ $\Upsilon(4S)$	Baseline/Flexibility with headroom at 4. 10^{36} cm^{-2}s^{-1}
Integrated luminosity	75 ab^{-1}	Based on a "New Snowmass Year" of 1.5 x 10^7 seconds (PEP-II & KEKB experience-based)
CM energy range	τ threshold to $\Upsilon(5S)$	For Charm special runs (still asymmetric……)
Minimum boost	$\beta\gamma$ ≈0.237 ~(4.18x6.7GeV)	1 cm beam pipe radius. First measured point at 1.5 cm
e^- Polarization	≥80%	Enables τ *CP* and *T* violation studies, measurement of τ *g*-2 and improves sensitivity to lepton flavor-violating decays. Detailed simulation, needed to ascertain a more precise requirement, are in progress.

Collider Parameters are "stable"

Parameter	Units	Base Line HER (e+)	Base Line LER (e-)	Low Emittance HER (e+)	Low Emittance LER (e-)	High Current HER (e+)	High Current LER (e-)	Tau-charm HER (e+)	Tau-charm LER (e-)
LUMINOSITY	$cm^{-2}\ s^{-1}$	1.00E+36		1.00E+36		1.00E+36		1.00E+35	
Energy	GeV	6.7	4.18	6.7	4.18	6.7	4.18	2.58	1.61
Circumference	m	1258.4		1258.4		1258.4		1258.4	
X-Angle (full)	mrad	66		66		66		66	
β_x @ IP	cm	2.6	3.2	2.6	3.2	5.06	6.22	6.76	8.32
β_y @ IP	cm	0.0253	0.0205	0.0179	0.0145	0.0292	0.0237	0.0658	0.0533
Coupling (full current)	%	0.25	0.25	0.25	0.25	0.5	0.5	0.25	0.25
Emittance x (with IBS)	nm	2.00	2.46	1.00	1.23	2.00	2.46	5.20	6.4
Emittance y	pm	5	6.15	2.5	3.075	10	12.3	13	16
Bunch length (full current)	mm	5	5	5	5	4.4	4.4	5	5
Beam current	mA	1892	2447	1460	1888	3094	4000	1365	1766
Buckets distance	#	2		2		1		1	
Ion gap	%	2		2		2		2	
RF frequency	MHz	476.		476.		476.		476.	
Revolution frequency	MHz	0.238		0.238		0.238		0.238	
Harmonic number	#	1998		1998		1998		1998	
Number of bunches	#	978		978		1956		1956	
N. Particle/bunch (10^{10})	#	5.08	6.56	3.92	5.06	4.15	5.36	1.83	2.37
σ_x effective	μm	165.22	165.30	165.22	165.30	145.60	145.78	166.12	166.67
σ_y @ IP	μm	0.036	0.036	0.021	0.021	0.054	0.0254	0.092	0.092
Piwinski angle	rad	22.88	18.60	32.36	26.30	14.43	11.74	8.80	7.15
Σ_x effective	μm	233.35		233.35		205.34		233.35	
Σ_y	μm	0.050		0.030		0.076		0.131	
Hourglass reduction factor		0.950		0.950		0.950		0.950	
Tune shift x		0.0021	0.0033	0.0017	0.0025	0.0044	0.0067	0.0052	0.0080
Tune shift y		0.097	0.097	0.0891	0.0892	0.0684	0.0687	0.0909	0.0910
Longitudinal damping time	msec	13.4	20.3	13.4	20.3	13.4	20.3	26.8	40.6
Energy Loss/turn	MeV	2.11	0.865	2.11	0.865	2.11	0.865	0.4	0.17
Momentum compaction (10^{-4})		4.36	4.05	4.36	4.05	4.36	4.05	4.36	4.05
Energy spread (10^{-4}) (full current)	dE/E	6.43	7.34	6.43	7.34	6.43	7.34	6.43	7.34
CM energy spread (10^{-4})	dE/E	5.0		5.0		5.0		5.0	
Total lifetime	min	4.23	4.48	3.05	3	7.08	7.73	11.4	6.8
Total RF Wall Plug Power	MW	16.38		12.37		28.83		2.81	

SuperB Collider Progress Report



New PDG table for SuperB

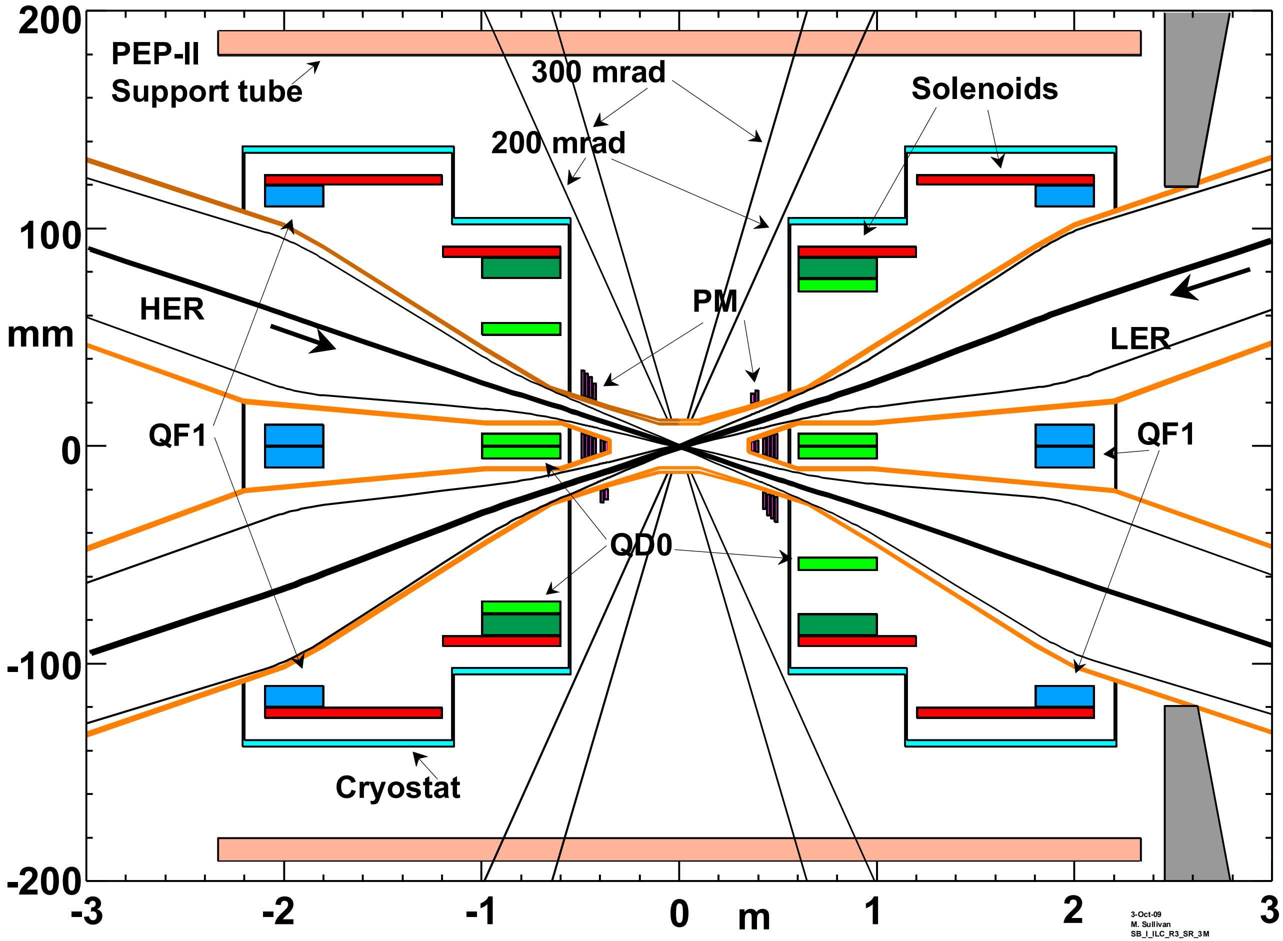
HIGH-ENERGY COLLIDER PARAMETERS: e^+e^- Colliders (III)

Updated in early 2010 with numbers received from representatives of the colliders (contact J. Beringer, LBNL). For existing (future) colliders the latest achieved (design) values are given. Quantities are, where appropriate, r.m.s.; H and V indicate horizontal and vertical directions; s.c. stands for superconducting.

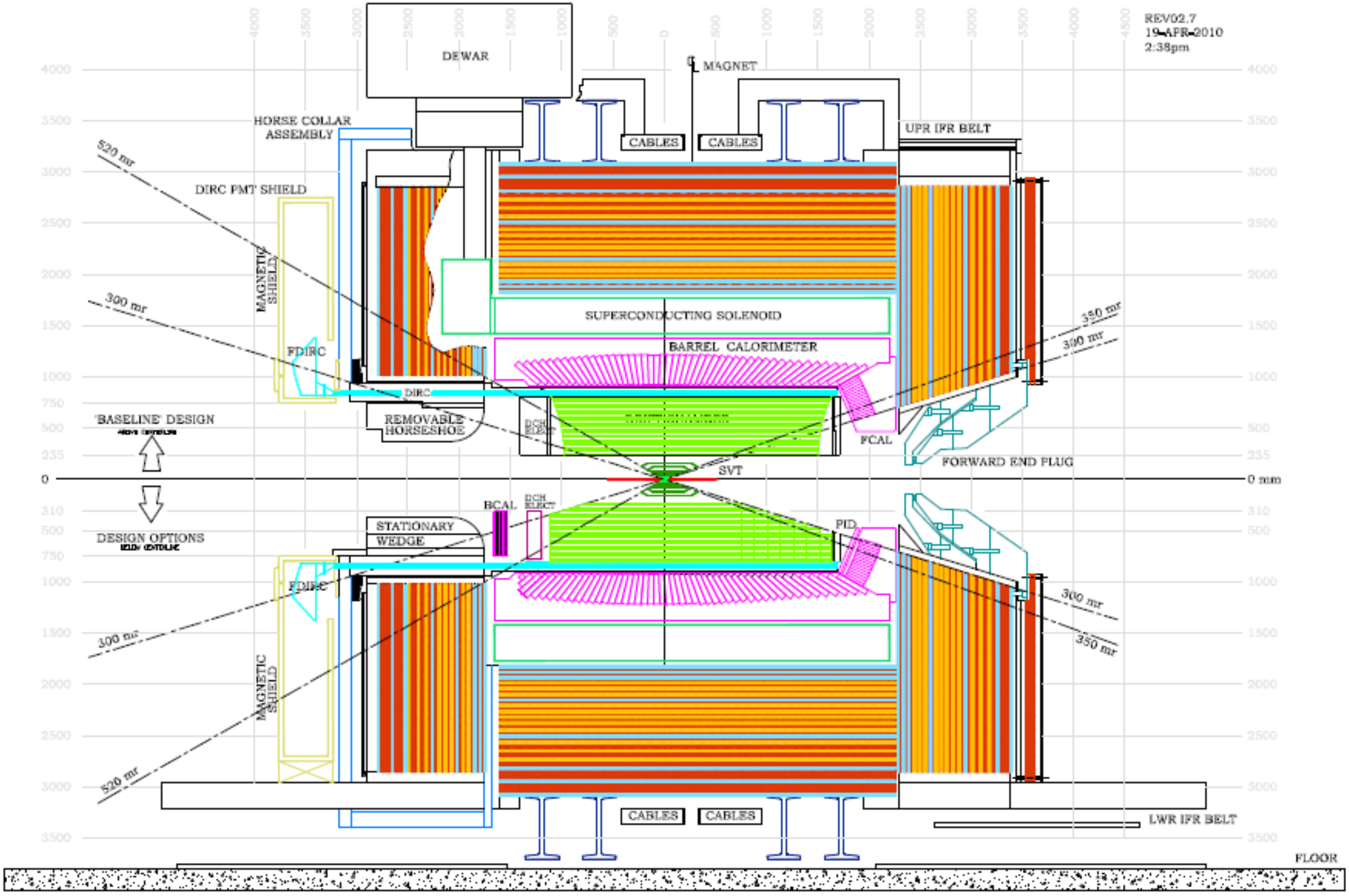
	KEKB (KEK)	PEP-II (SLAC)	SuperB (Italy)	SuperKEKB (KEK)
Physics start date	1999	1999	TBD	2014 ?
Physics end date	—	2008	—	—
Maximum beam energy (GeV)	e^-: 8.33 (8.0 nominal) e^+: 3.64 (3.5 nominal)	e^-: 7–12 (9.0 nominal) e^+: 2.5–4 (3.1 nominal) (nominal E_{cm} = 10.5 GeV)	e^-: 4.2 e^+: 6.7	e^-: 7 e^+: 4
Luminosity (10^{30} cm^{-2}s^{-1})	21083	12069 (design: 3000)	1.0×10^6	8×10^5
Time between collisions (μs)	0.00590 or 0.00786	0.0042	0.0042	0.004
Full crossing angle (μ rad)	$\pm 11000^\dagger$	0	± 33000	± 41500
Energy spread (units 10^{-3})	0.7	e^-/e^+: 0.61/0.77	e^-/e^+: 0.73/0.64	e^-/e^+: 0.58/0.84
Bunch length (cm)	0.65	e^-/e^+: 1.1/1.0	0.5	e^-/e^+: 0.5/0.6
Beam radius (μm)	H: 124 (e^-), 117 (e^+) V: 0.94	H: 157 V: 4.7	H: 8 V: 0.04	e^-: 11 (H), 0.062 (V) e^+: 10 (H), 0.048 (V)
Free space at interaction point (m)	+0.75/−0.58 (+300/−500) mrad cone	±0.2, ±300 mrad cone	±0.35	e^-: +1.20/−1.28, e^+: +0.78/−0.73 (+300/−500) mrad cone
Luminosity lifetime (hr)	continuous	continuous	continuous	continuous
Turn-around time (min)	continuous	continuous	continuous	continuous
Injection energy (GeV)	e^-/e^+: 8/3.5	2.5–12	e^-/e^+: 4.2/6.7	e^-/e^+: 7/4
Transverse emittance (π rad-nm)	e^-: 24 (57*) (H), 0.61 (V) e^+: 18 (55*) (H), 0.56 (V)	e^-: 48 (H), 1.5 (V) e^+: 24 (H), 1.5 (V)	e^-: 2.5 (H), 0.006 (V) e^+: 2.0 (H), 0.005 (V)	5 (H), 3 (V)
β^*, amplitude function at interaction point (m)	e^-: 1.2 (0.27*) (H), 0.0059 (V) e^+: 1.2 (0.23*) (H), 0.0059 (V)	e^-: 0.50 (H), 0.012 (V) e^+: 0.50 (H), 0.012 (V)	e^-: 0.032 (H), 0.00021 (V) e^+: 0.026 (H), 0.00025 (V)	e^-: 0.025 (H), 3×10^{-4} (V) e^+: 0.032 (H), 2.7×10^{-4} (V)
Beam-beam tune shift per crossing (units 10^{-4})	e^-: 1020 (H), 900 (V) e^+: 1270 (H), 1290 (V)	e^-: 703 (H), 498 (V) e^+: 510 (H), 727 (V)	20 (H), 950 (V)	e^-: 12 (H), 807 (V) e^+: 28 (H), 893 (V)
RF frequency (MHz)	508.887	476	476	508.887
Particles per bunch (units 10^{10})	e^-/e^+: 4.7/6.4	e^-/e^+: 5.2/8.0	e^-/e^+: 5.1/6.5	e^-/e^+: 6.53/9.04
Bunches per ring per species	1585	1732	978	2500
Average beam current per species (mA)	e^-/e^+: 1188/1637	e^-/e^+: 1960/3026	e^-/e^+: 1900/2400	e^-/e^+: 2600/3600
Beam polarization (%)	—	—	> 80	—
Circumference or length (km)	3.016	2.2	1.258	3.016
Interaction regions	1	1	1	1
Magnetic length of dipole (m)	e^-/e^+: 5.86/0.915	e^-/e^+: 5.4/0.45	e^-/e^+: 0.9/5.4	e^-/e^+: 5.9/4.0
Length of standard cell (m)	e^-/e^+: 75.7/76.1	15.2	40	e^-/e^+: 75.7/76.1
Phase advance per cell (deg)	450	e^-/e^+: 60/90	360 (V), 1080 (H)	450
Dipoles in ring	e^-/e^+: 116/112	e^-/e^+: 192/192	e^-/e^+: 186/102	e^-/e^+: 116/112
Quadrupoles in ring	e^-/e^+: 452/452	e^-/e^+: 290/326	e^-/e^+: 290/300	e^-/e^+: 466/460
Peak magnetic field (T)	e^-/e^+: 0.25/0.72	e^-/e^+: 0.18/0.75	e^-/e^+: 0.52/0.25	e^-/e^+: 0.22/0.19

SuperB IR Layout

M. Sullivan



SuperB Detector (with options)



Open Issues

- SVT Layer0
- Forward EMC
- Forward PID (if any)
- Backward Calorimeter

Open issues in detector

In addition to what discussed so far there are several open issues:

1. The vertical size of bunches is O(40 nm) → peak luminosity is strongly dependent on alignment and feedback a precise control of luminosity is needed in almost real time. A luminosity monitor rad hard , fast and precise is needed.

2. A precision determination of beam polarization is required for measuring asymmetries to extract SM parameters better than at LEP and SLD. A detector giving the polarization with a precision better than 0.5% is needed.

Expect from TDR

TDR has to be the document before construction.

- It should contain the engineering of subdetectors
- It should contain institutional responsibilities
- It should contain human resources description and financial coverage.

Freezing on all systems within 2011 and forcing on a premature closing to new entries and contibutions from new institutions and regions would be a sort of suicide.

However……

Expect from TDR

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However……

Must be Flexible an Wise

Systems “mature”, funded and supported by strong teams should move soon to construction Phase.
Other systems can wait just the minimum needed….

No premature descoping.
A review system internal to SuperB in place soon for continuous monitoring.

An external Review Committee also needed by the end of this year.

Toward fixing the site requirements.

Site Requirements Evaluation For the Super*B* collider and Synchrotron Light Facility Project

E. Di Fabrizio[1], M. Esposito[2], P. Popolizio[3], P. Raimondi[4], J. Seeman[5], S. Tomassini[4]

January 12th 2011

- An ad hoc committee has been set up to prepare the document on requirements for the site choice , preliminary to the infrastructure design.
- Requirements and design will be reviewed by an International Review Committee

Site identification is in Progress

The International SuperB Site Committee led by J.Osborne will be in Frascati 8 and 19 April 2011 to discuss the site requirements and possibly to visit one site candidate in Tor Vergata.

About the approval of SuperB

Progetti Bandiera Flagship Projects

Gli interventi

Progetto	Settore	Valore stimato (milioni)
Super B Factory	Fisica	650
Cosmo - Skymed II generation	Aerospazio	N.D.
Epigenomica	Medicina	N.D.
3N - Network nazionale delle nanotecnologie	Industria	300
Ritmare - Ricerca ita. per il mare	Industria	795
Sintonia - Sistema integrato di telecomunicazioni	Aerospazio	671
Ipi - Invecchiamento e pop. isolate	Medicina	90
Agro Alimentare	Agricoltura	100
L'ambito nucleare	Energia	53,5
Recupero e rilancio della Villa dei Papiri	Beni cluturali	20
Elettra-Fermi-Eurofel	Industria	191
Astri - Astrofisica con specchi a tecnologia replicante italiana	Aerospazio	8
Controllo delle crisi nei sistemi complessi socio-economici	Economica	30
La fabbrica del futuro	Industria	30

Extracts from official documents of Italian Government and Italian Parliament

SENATO DELLA REPUBBLICA

XVI LEGISLATURA

N. 303

ATTO DEL GOVERNO

SOTTOPOSTO A PARERE PARLAMENTARE

Schema di decreto ministeriale recante ripartizione del Fondo ordinario per gli enti e le istituzioni di ricerca, per l'anno 2010

SENATO DELLA REPUBBLICA
Segretariato Generale
Data - 6 DIC. 2010

Ministero dell'Istruzione, dell'Università e della Ricerca

DIPARTIMENTO PER L'UNIVERSITÀ, L'ALTA FORMAZIONE ARTISTICA, MUSICALE E COREUTICA E PER LA RICERCA

DIREZIONE GENERALE PER IL COORDINAMENTO E LO SVILUPPO DELLA RICERCA

Prot. 1417

Roma, 3 DIC. 2010

Al Presidente del Senato della Repubblica
Palazzo Madama
00186 ROMA

Ministerial act sent to parliament on DEC 3 , 2010

Quanto alle indicazioni per il biennio successivo – da fornirsi ai sensi del disposto di cui all'art. 7 comma 2 del citato decreto legislativo 204/1998 – il provvedimento che si sottopone alle valutazioni delle Commissioni parlamentari prevede che gli enti destinatari delle assegnazioni potranno considerare quale dato certo per la predisposizione del proprio bilancio di previsione 2011 l'87% delle assegnazioni ordinarie stabilite per il corrente esercizio. Tale indicazione è in linea con quanto disposto dall'art. 4, comma 2, del D.Lgs. n. 213/2009 di riordino degli enti, che stabilisce che a decorrere dal 2011 una quota non inferiore al 7% dello stanziamento, con progressivi incrementi per gli anni successivi, dovrà essere destinata "al finanziamento premiale di specifici programmi e progetti, anche congiunti, proposti dagli enti" e che "I criteri e le motivazioni di assegnazione della predetta quota sono disciplinate con decreto avente natura non regolamentare del Ministro". In attuazione della predetta disposizione nel 2011 un accantonamento pari al 7% del Fondo verrà destinato alle finalità di cui al citato decreto legislativo. Un ulteriore accantonamento, corrispondente all'8% delle disponibilità del Fondo, verrà invece utilizzato per dare continuità al

Ministero dell'Istruzione, dell'Università e della Ricerca

contributo finanziario dei "progetti bandiera" proposti dagli enti e inseriti nella nuova programmazione nazionale della ricerca, già avviati nel 2010 e di altri progetti di ricerca ritenuti di particolare interesse nell'ambito delle scelte strategiche e/o degli indirizzi di ricerca impartiti dal Ministero.

Si esprime viva preghiera affinché la S.V. adotti gli utili provvedimenti per consentire alla Commissione Parlamentare competente di esprimere il prescritto parere.

IL MINISTRO

Mariastella Gelmini

Out of the original 12 Flagship Projects "Progetto Bandiera" as presented by Minister Gelmini at the end of M and reported on the italian media, now only 6 are funded.

The act says that 8% of the Full Budget of the Research agencies will be used from now on to ensure the full funding of the multiyear Progetti Bandiera.

SuperB is the only one quoted as multiyear..

The Minister Act was finally approved by the Senate and Chamber on Dec 14 and 15, 2010

Last week the CIPE (Inter Ministry Committee) has decided the approval of the National Research Plan, containing the funding of SuperB

From now ….. Plan for future

•Choose the site asap! (the preferred site is Tor Vergata close to LNF)
•Organize for the completion of TDR
•Prepare the transition from TDR Phase to Construction
•Start the recruitment for the construction mainly Accelerator Physicists and Engineers
•Prepare for spending a reasonable fraction of the initial contribution in 2011

Move forward

- Meanwhile progress with IIT (as user of the photon lines) for its co-funding of SuperB.
- Prepare to submit to EU set up of SuperB ERIC. A draft of governance is ready and under examination.

Cover Page of the Governance Draft

SuperB ERIC Statute

12 October 2010-Draft

DRAFT

Statute of the European Research Infrastructure Consortium SuperB
(SuperB "N. Cabibbo" ERIC)

Moving to next phase

1st SuperB General Meeting

- Site decision
- Management structure and team for Machine construction
- Initiate the collaboration for Detector Construction
- Physics document on comparison?

- Validation of Machine Footprint by a possible MAC/MiniMAC next July 2011

La Biodola Isola d'Elba
May 28-June 1 + Appendix June 2 and 3

END