Beauty 2005
Assisi (Italy)
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ATLAS Performance for B-physics

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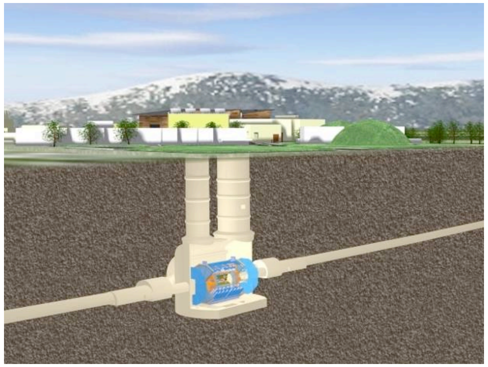
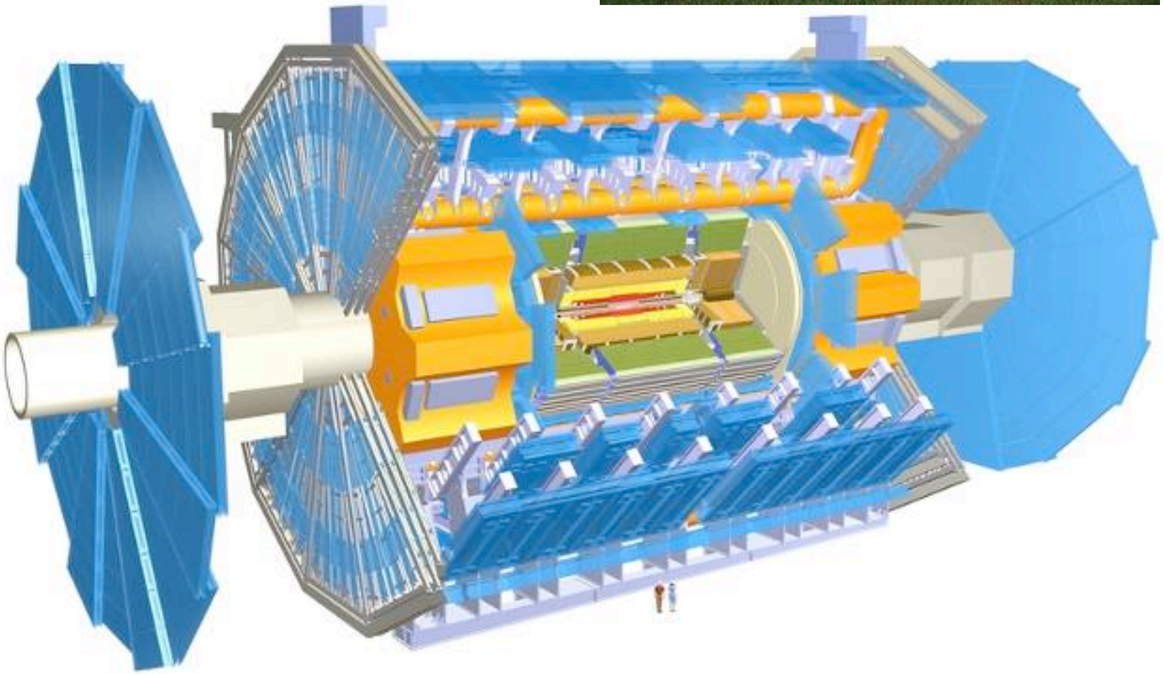
(On behalf of the ATLAS Collaboration)

Outline:

1. ATLAS Detector Status
2. ATLAS Strategy for B-Physics
3. The Trigger System for B-Physics
4. B-Physics Topics and ATLAS Sensitivity to New Physics
5. Summary

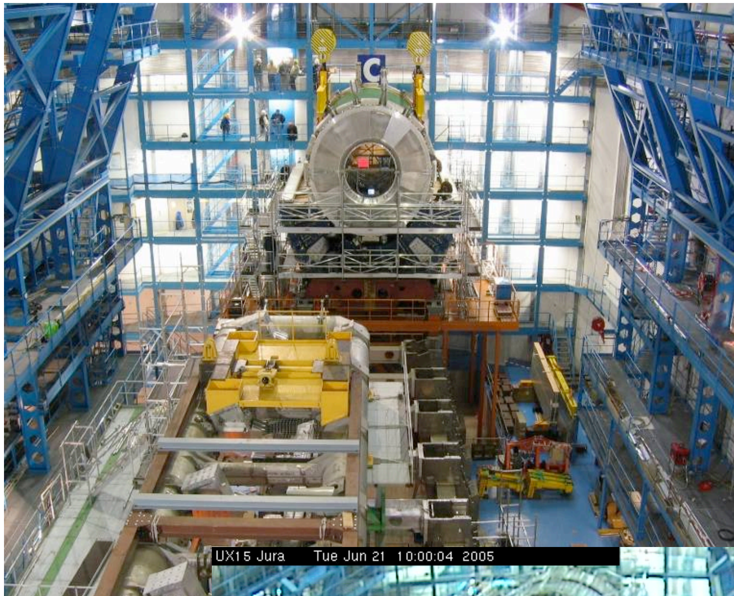
The ATLAS Detector

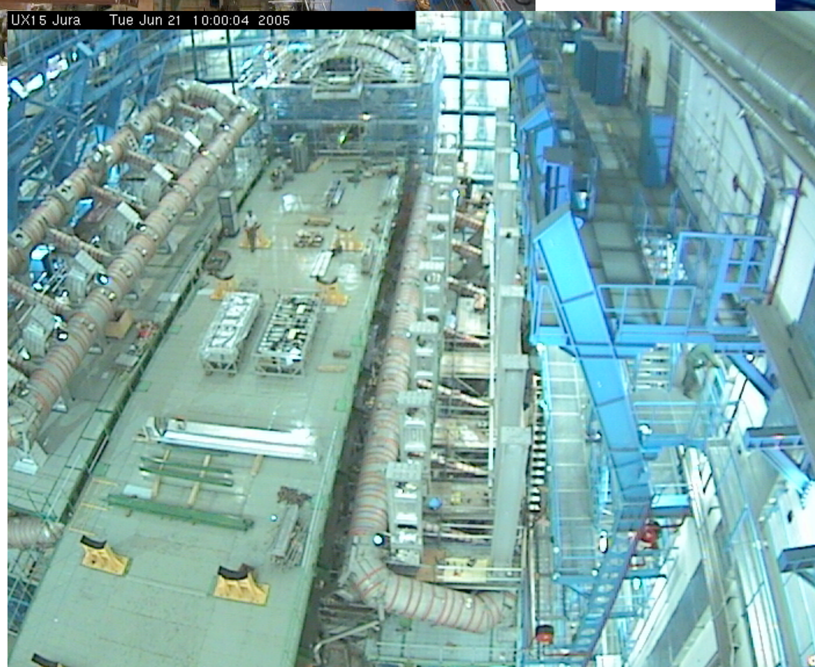




- Inner Detector (ID)
  - Semiconductor pixel and strip detector
  - Transition radiation tracker: straw-tubes interspersed with a radiator (e/π separation)
  - Inside solenoid of 2T magnetic field
- Calorimeter
  - Highly granular LAr EM calorimeter: $|\eta| < 3.2$
  - Hadron calorimeter: $|\eta| < 4.9$ (scintilator-tile in barrel and LAr in end-caps and forward)
- Muon spectrometer
  - Air-core toroid system on average ~ 0.5 T
  - MDTs & CSCs; RPCs & TGCs

ATLAS is Getting Ready





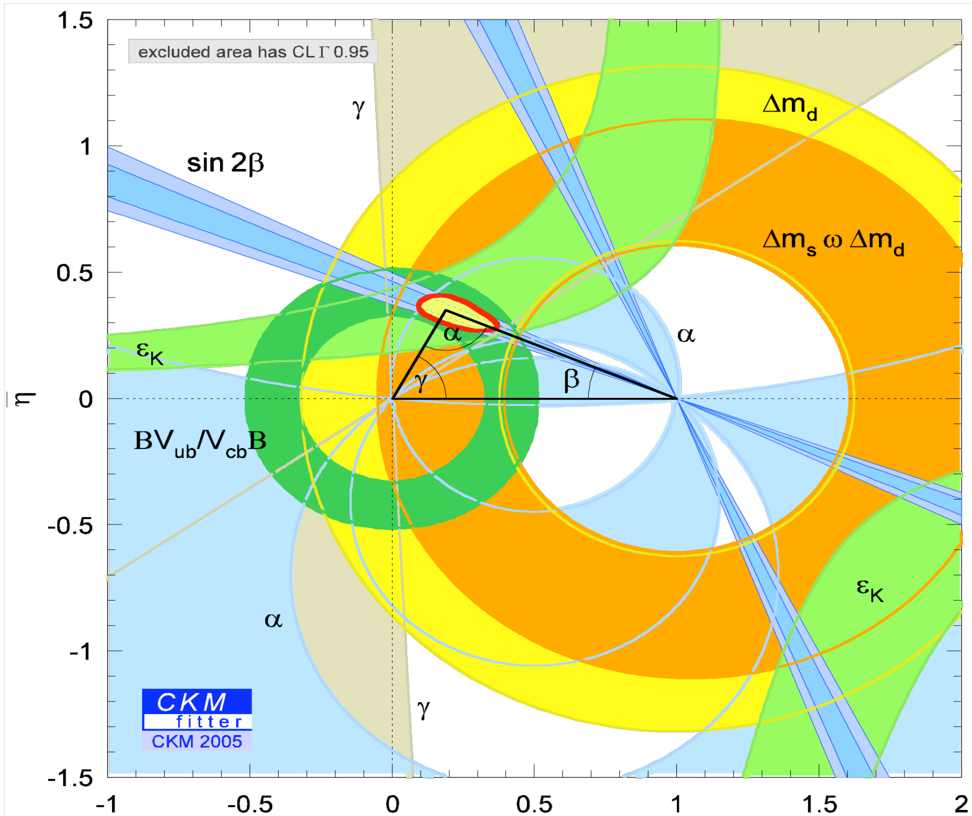
ATLAS Detector in 2007

According to the present schedule the ATLAS detector will have full geometrical coverage for muons, electrons and hadrons for first collisions in 2007

However, it will have some differences compared to the design that was presented in the TDR, some of which affect the B-physics programme

- In the Inner Detector
  - The innermost pixel layer will be at a radius of 5 cm (4.3 cm in TDR) from the beam line
    - As a consequence, the secondary vertex resolution degrades by ~40% with respect to the originally foreseen
  - Some parts of the TRT wheels will not be installed
    - Reduced number of hits per track in forward region
- High Level Trigger System
  - Computing resources at startup will be reduced
    - The priorities in ATLAS (high-p_T physics) reduce the available resources for B-physics triggers
- Nominal early luminosity is now foreseen to be 1-2.10^{33} $cm^{-2}s^{-1}$

Remarkable Progress of B-Factories and Tests of SM



$$\begin{pmatrix} d' \\ s' \\ b' \end{pmatrix} = \begin{pmatrix} V_{ud} & V_{us} & V_{ub} \\ V_{cd} & V_{cs} & V_{cb} \\ V_{td} & V_{ts} & V_{tb} \end{pmatrix} \cdot \begin{pmatrix} d \\ s \\ b \end{pmatrix} ; \begin{pmatrix} 1-(\lambda^2/2) & \lambda & A\lambda^3(\rho - i\eta) \\ -\lambda & 1-(\lambda^2/2) & A\lambda^2 \\ A\lambda^3(1-\rho-i\eta) & -A\lambda^2 & 1 \end{pmatrix}$$

$$|V_{ud}|^2 + |V_{us}|^2 + |V_{ub}|^2 = 1$$

April 2005 SM fits of Unitarity triangle of Cabibbo Kobayashi Maskawa Matrix

- SM fit of CKM angles are consistent with B-factories measurements

  $\sin 2\beta = 0.725 \pm 0.037$

  $\alpha = [\ 101+16\ -9\ ]^o$

  $\gamma = [\ 63\ +15\ -13\ ]^o$

- Direct measurements of angles agree with SM CKM fit within errors varying between 6%-22%
- Unconstrained sum of angles = 187^o consistent with unitarity sum within the errors

CP Violation Measurements in ATLAS

Method: maximum likelihood fit using event by event tag and decay time information
Experimental inputs: proper time resolution, tag probability, wrong-tag fraction, background composition.
Direct CP violation term neglected

TDR Results

3years@$10^{33}cm^{-2}s^{-1}$	$J/\psi(\mu6\mu3)$	$J/\psi(\mu6\mu5)$	$J/\psi(ee)$ $+B\to\mu6$
All reconstructed evts S/B	490k 28	250k 32	15k 16
$\Delta\sin2\beta$ statistical Lepton tag Jet/charge tag Total	 0.023 0.015 0.0126	 0.030 0.019 0.016	 0.018 - 0.018
Total $J/\psi(\mu6\mu3)$ + $J/\psi(ee)B\to\mu6$)	0.010	Total $J/\psi(\mu6\mu5)$ + $J/\psi(ee)B\to\mu6$	0.012
$\Delta\sin2\beta$ systematics prod. asymmetry, tagging, background		0.005	

Improving the precision on sin 2β with the decay $B_d \to J/\psi K_s$ will be possible

(it is an important measurement that must be done)

ATLAS Strategy for B-Physics

- Precision CP violation measurements at the level of 1% are tricky
    - The production asymmetry between B^0 and anti-B^0 at LHC are at the same level
    - Requires a very well understood detector
    - It will take a long time before all systematic uncertainties are well understood

- Improving the measurements of the other angles of the unitarity triangle often needs hadronic decays of B mesons.
        - ATLAS does not have hadron PID detectors or a dedicated hadronic B trigger

- Present fits on the unitarity triangle have not shown an indication of new physics

- Statistics before LHC might well not be sufficient to reach the necessary sensitivity to do so

ATLAS Strategy for B-Physics

Our strategy is to concentrate on multi-leptonic and photon decay channels that are sensitive to new physics

ATLAS primary goal is the search for new physics beyond the Standard Model

We concentrate efforts in B physics measurements where ATLAS can give a significant contribution

We concentrate on measurements that might indicate New Physics effects and can also constrain non-Standard Model operators

ATLAS Strategy for B-Physics

- Concentrate on measurements that extend the discovery potential of ATLAS for physics beyond the Standard Model
  - Measurements of rare b-decays are a good examples for these measurements ($B_d \to K^*\gamma$, $B_d \to K^*\mu\mu$, $B_{d,s} \to \mu\mu$, $B_s \to \phi\mu\mu$, $B_s \to \gamma\mu\mu$, …)
  - Similarly, measurements of CP violation parameters that are predicted to be small in the SM (e.g. in $B_s \to J/\psi\phi$ (η))

- Focus on physics topics that will not be accessible to the B-Factories
  - Mainly B_s, Baryon and doubly heavy flavour hadrons ($B_s \to D_s\pi$, $B_s \to J/\psi\phi$ (η), $\Lambda_b \to J/\psi\Lambda^0$, $B_c \to J/\psi\pi$, …)

- Concentrate efforts in channels that can also be accessible (or where we have additional advantages) at the higher luminosities (10^{34} cm^{-2}s^{-1})
  - Decays where a di-muon trigger can be used
    - They have a very low rate but cover many interesting channels

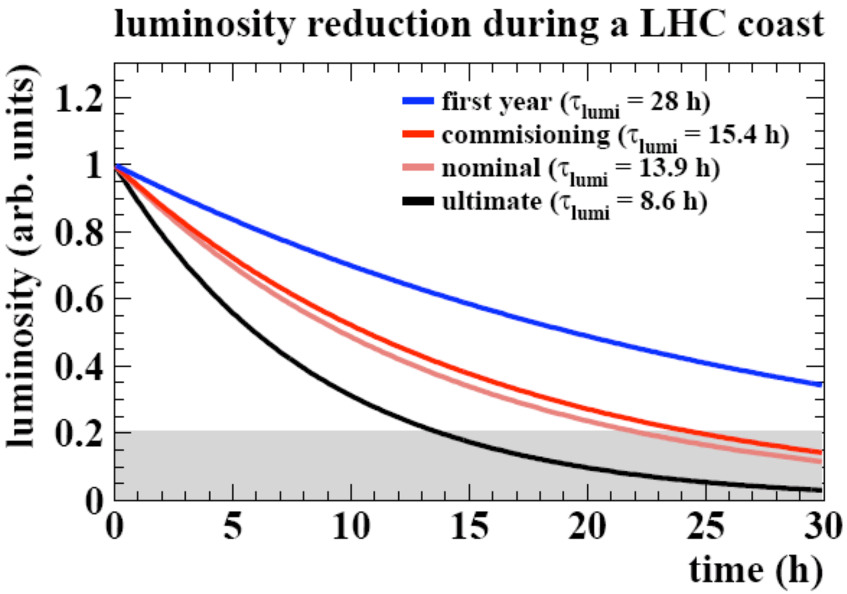
B-Physics Triggering – the Challenge

Object	Examples of physics coverage
e	Higgs, **B-physics**, new gauge bosons, extra dimensions, SUSY, W, top
γ	Higgs, extra dimensions, SUSY, **B-physics**
μ	**B-physics**, Higgs, new gauge bosons, extra dimensions, SUSY, W, top
Jets	SUSY, compositeness, resonances, **B-physics**
Jet+ missing E_T	SUSY, leptoquarks, "large" extra dimensions
τ+ missing E_T	Extended Higgs models (e.g. MSSM), SUSY

- ATLAS is a multipurpose physics experiment with emphasis in high-p_T physics
  - The trigger settings have to be general and non-biasing
  - The trigger selects events with basic objects above a given p_T threshold (signatures)
- In the illustrative trigger menus (presented in the HLT/DAQ TDR) more than 50% of the rate at LVL1 and almost 40% of the rate at HLT come from electron signatures
  - Difficult to decrease the E_T threshold of the selected electrons/photons without additional trigger resources
  - The key to the B-physics programme is muons that can be identified cleanly at early stages of the trigger.
    - Although the BR is only about 10%, the muons also give a clean flavour tag (needed in many CP violation and flavour oscillation studies)
- About 1% of collisions produce a bb pair
  - Trigger must be more selective than only concentrating in basic signatures
    - For example, LVL1 rate is 23 kHJz for a trigger in single muons of p_T>6GeV

Strategy for B-Physics Triggering

- Luminosity falls by a factor of 2 in a 10 hours run
  - Take advantage of this and, as luminosity drops, use spare capacity for B-physics triggers



- We have developed a very flexible trigger strategy for B-physics from the initial to the highest luminosities.
  - At luminosity $\geq 2\times10^{33}$: di-muon trigger
  - At lower luminosities: introduce additional semi-exclusive trigger selection based on single muons and partial reconstruction of B-decays
  - Open option to include other trigger signatures: muon+electron/photon and muon+jet at the lowest possible p_T

The ATLAS Trigger System

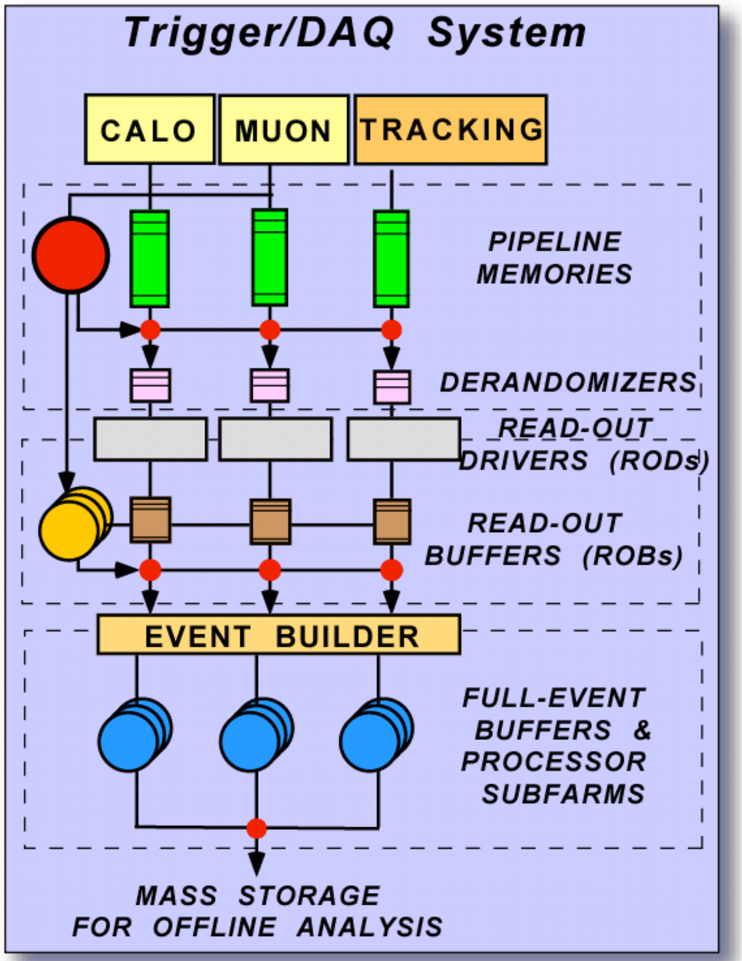
RATES

40 MHz

75 kHz

2 kHz

200 Hz



LEVEL 1 TRIGGER

- Hardware-Based (FPGAs ASICs)
- Coarse granularity from calorimeter & muon systems
- 2 μs latency (2.5 μs pipelines)

LEVEL 2 TRIGGER

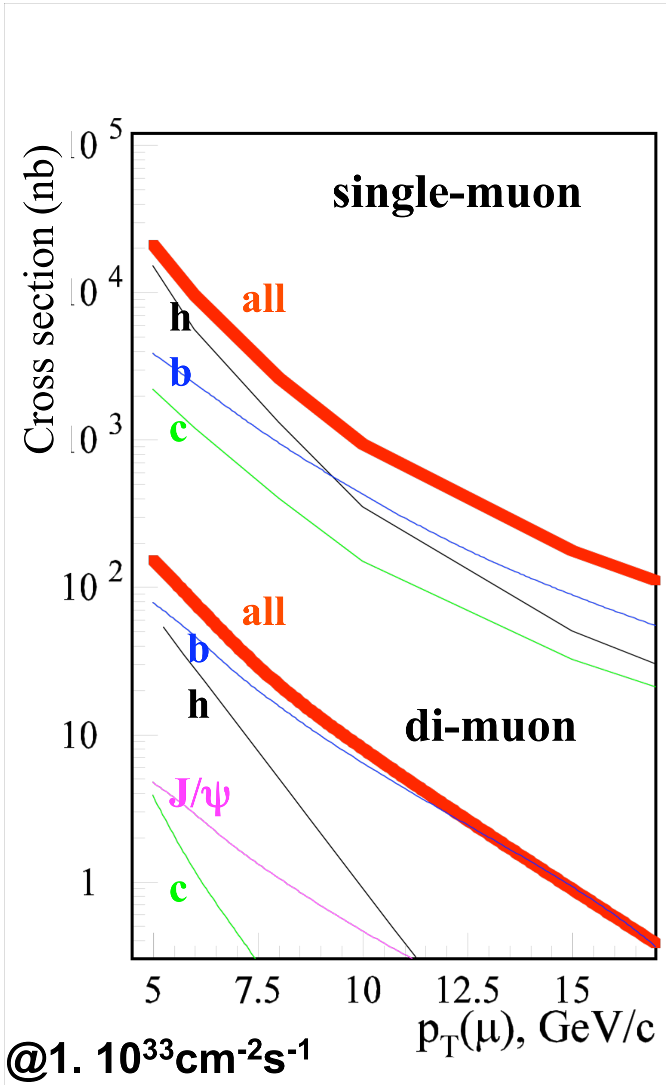
- Regions-of-Interest “seeds”
- Full granularity for all subdetector systems
- Fast Rejection “steering”
- O(10 ms) processing time

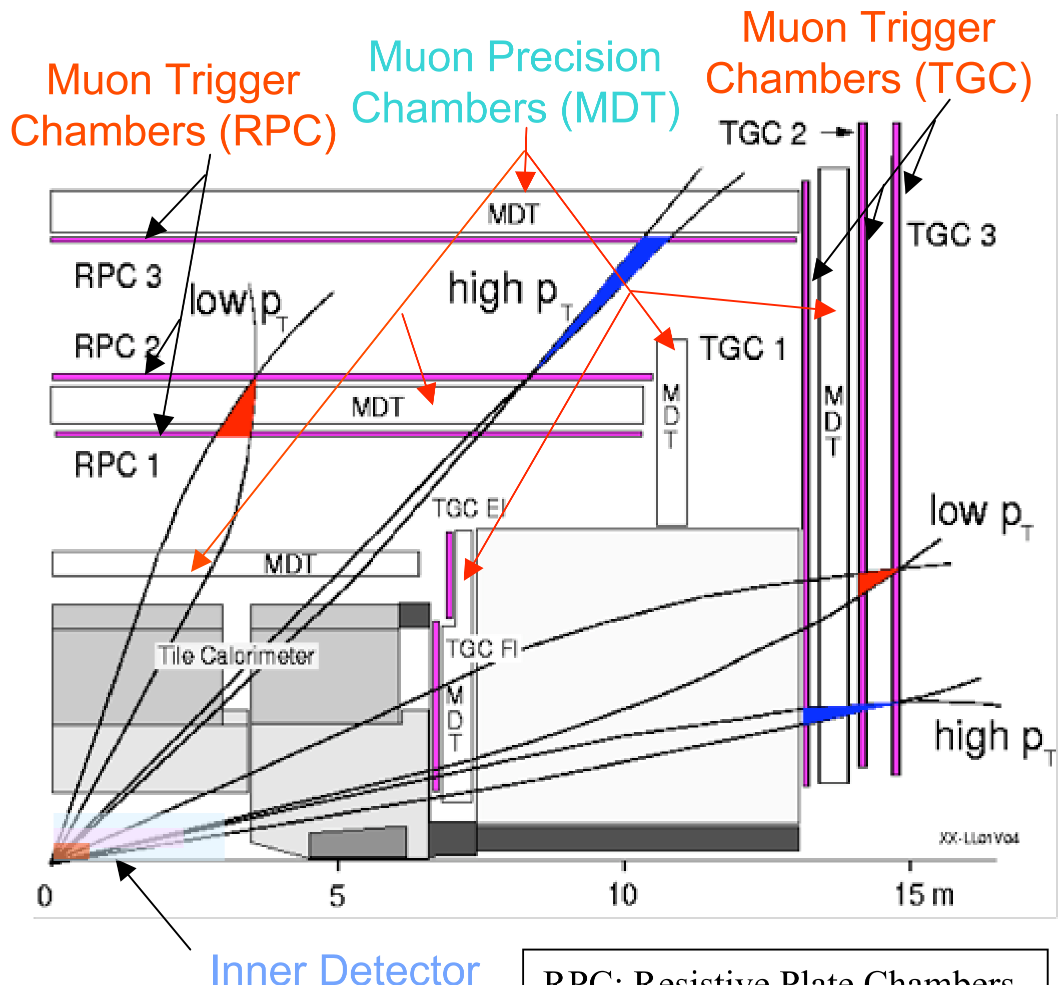
EVENT FILTER

- “Seeded” by Level 2 result
- Potential full event access
- Offline-like Algorithms
- O(1 s) processing time

High Level Trigger

LVL1 Muon Trigger



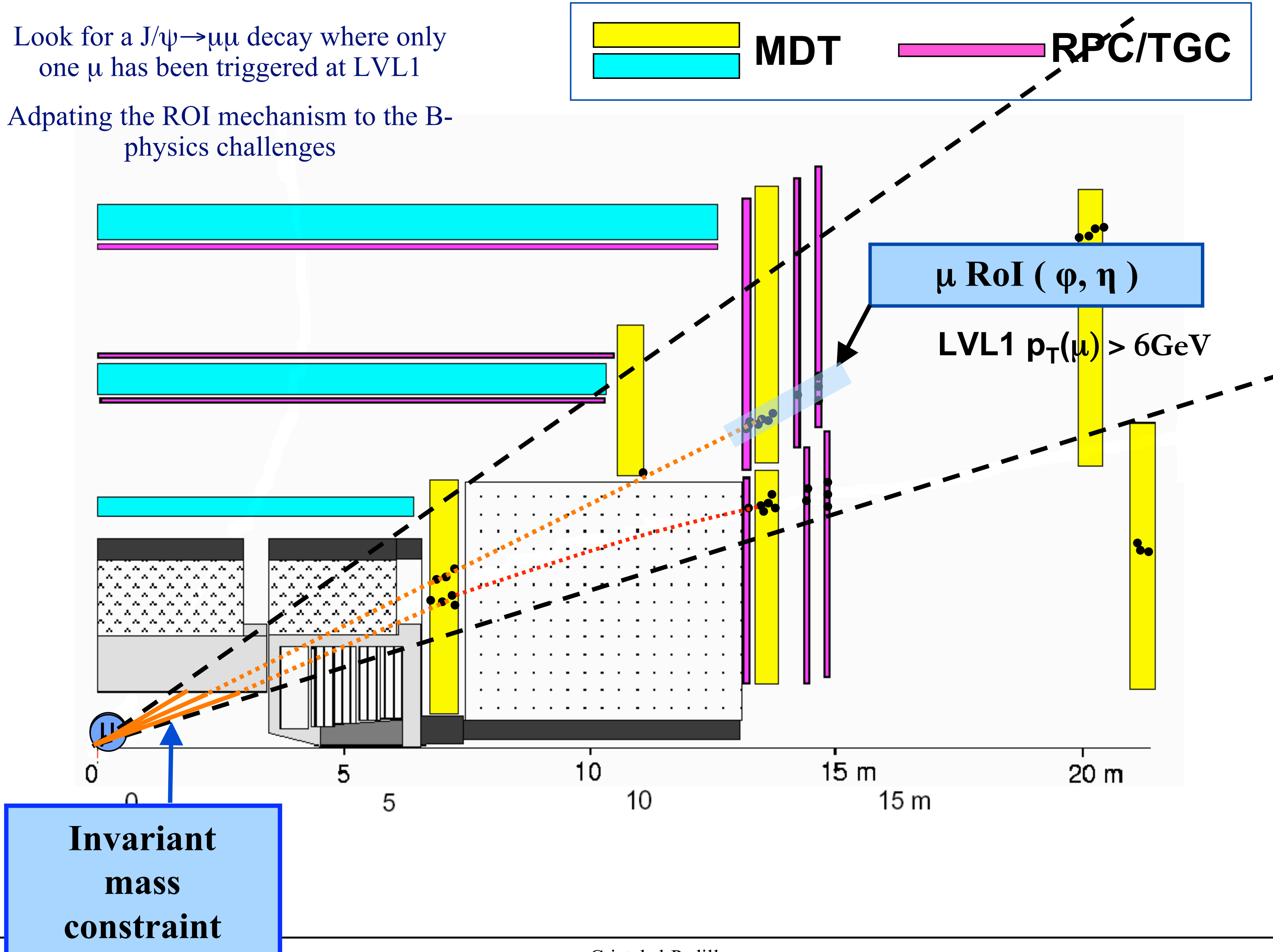


RPC: Resistive Plate Chambers
TGC: Thin Gap Chambers
MDT: Monitored Drift Tubes

An Example of the ROI Mechanism in the HLT

Look for a J/ψ→μμ decay where only one μ has been triggered at LVL1

Adpating the ROI mechanism to the B-physics challenges



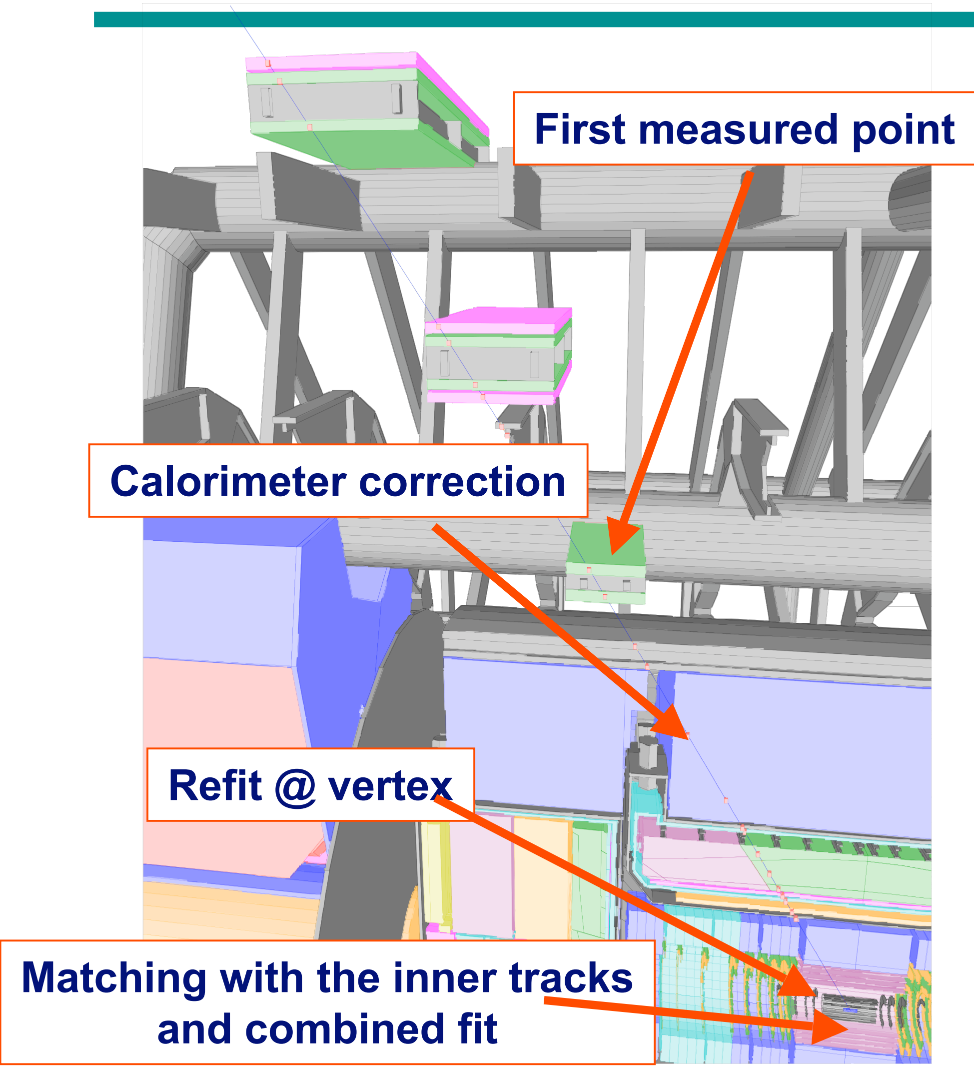
Estimates of Overall Trigger Efficiencies

- In order to validate the trigger strategy, we have performed studies of example channels (presented in red) where
  - Trigger algorithms start from realistic raw data
  - Execute within the available time budget
  - Give affordable output rates

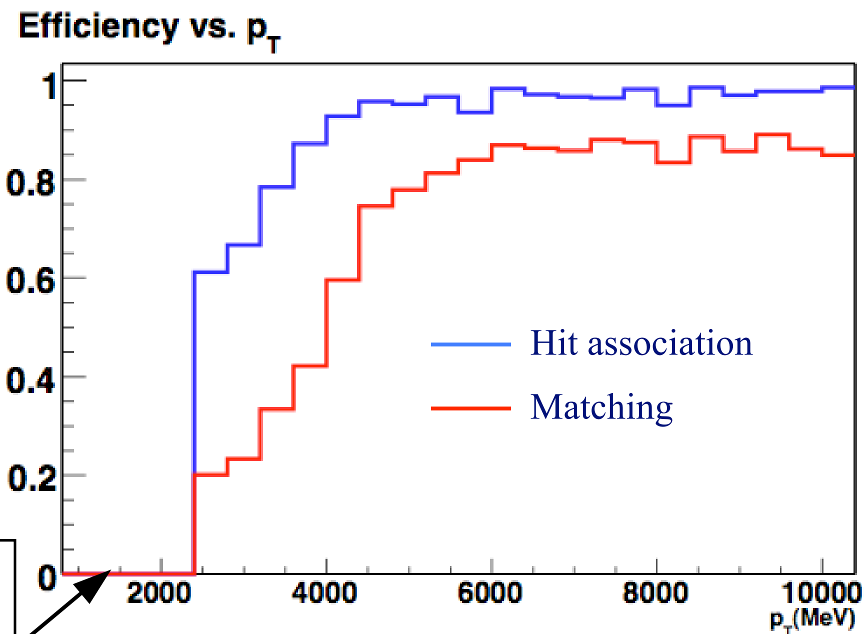
	LVL1+LVL2	EF	Overall Effic.
$B \rightarrow \mu^+ \mu^-$	~75%	95%	~70% Events with $\mu^+$and μ^- $p_T > 6$ GeV
$B \rightarrow \mu^+ \mu^- K^*$	~75%	85%	~65% Events with $\mu^+$and μ^- $p_T > 6$ GeV
$B_d \rightarrow J/\psi(\mu\mu)K^0_s$	First μ: ~85% J/ψ(μμ): 77% Overall: ~65%	~100%	~65% Events with one μ p_T>6 GeV and other μ $p_T > 3$ GeV
$B_d \rightarrow J/\psi(ee)K^0_s$	Muon: ~85% J/ψ(ee): 72% Overall: ~60%	~100%	~60% Ev. with e^+ and e^- $p_T > 5$ GeV ~40% 1 e p_T>5 GeV, 1 e p_T>2 GeV
$B_s \rightarrow D_s\pi$ $D_s \rightarrow \phi(KK)\pi$	Muon: ~85% $D_s(\phi,\pi)$: 50% Overall: ~40%	~100%	~40% (~50% using LVL2 full-scan) Events with B_s p_T>10GeV and K, K, π $p_T > 1.5$ GeV

Single muon trigger efficiency limited to 82.5% in the barrel due to geometrical acceptance

Low and Medium p_T Muon Reconstruction Performance



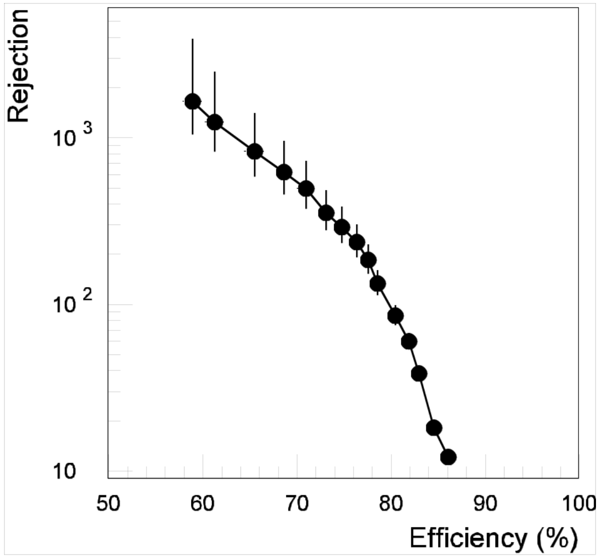
- The "standard" Muon reconstruction algorithm matches track segments of the Muon Spectrometer and the ID
  - Low efficiency at low p_T
- Efficiency increased by combining ID tracks with hits in the Muon Spectrometer



Reconstruction of lower p_T muons is possible using the Hadronic Calorimeter and the forward muon detectors

ATLAS Performance Parameters for B-Physics

Combined EM calorimeter-TRT electron identification

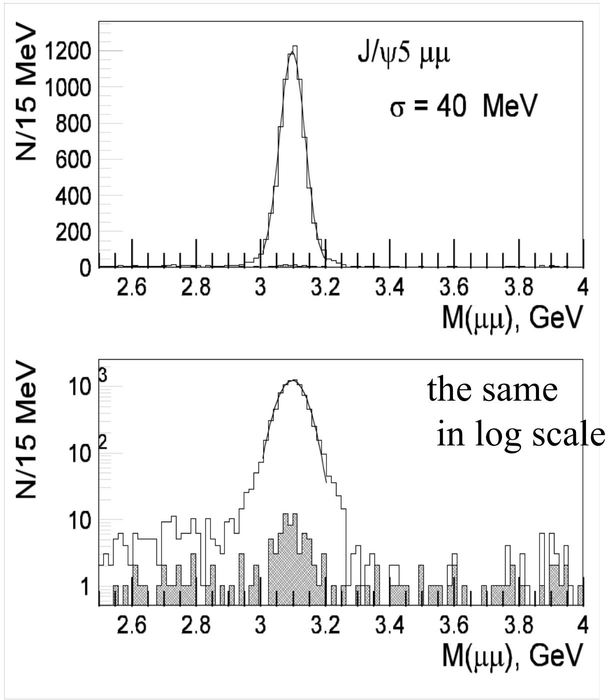


Rejection of bb→μ(6)X events without electron
vs.
efficiency of events bb→μ(6)e(5)X

Eff=70%, R=570
(hadrons misidentified as electrons)

J/ψ→μμ reconstruction performance for QCD b-production studies

Perform a reconstruction in the environment of b-jet with p_T~(50-80) GeV

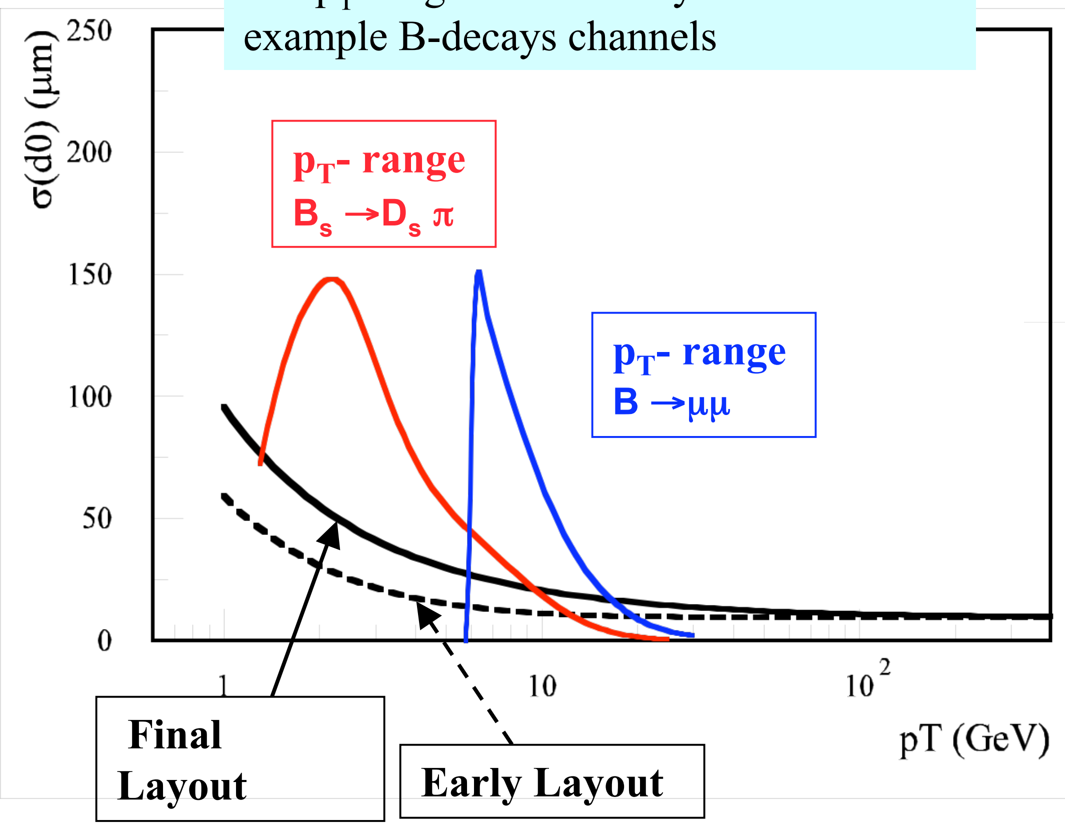


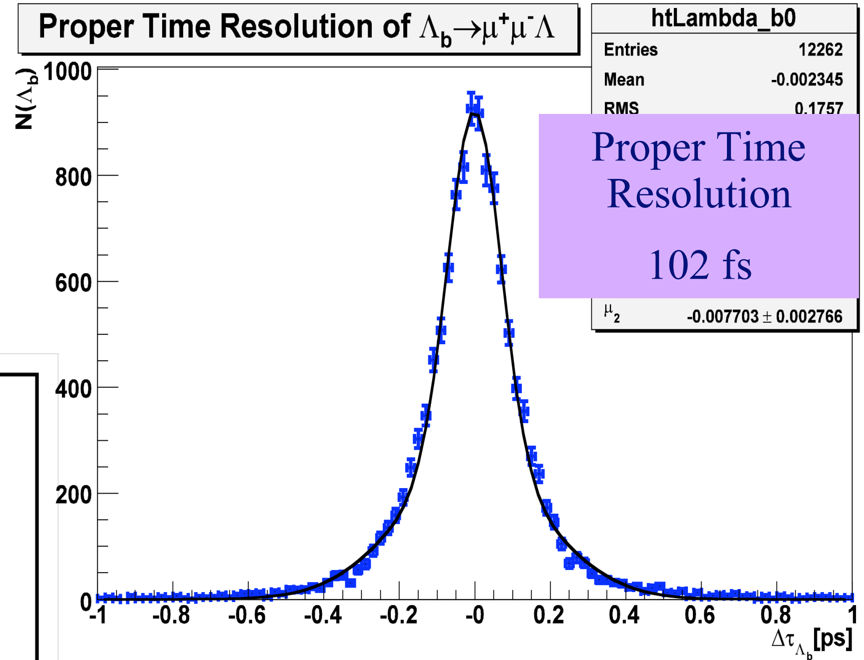
Even in high p_T jet, mass reconstruction is negligibly affected by fake pairs in which a muon identified in the muon spectrometer is matched to a wrong track in the ID

Impact Parameter and Proper Time Reconstruction

ATLAS Final detector layout
with 1st pixel layer radius 5cm
(4.3 cm in Early layout '98)

Impact parameter resolution σ (d0) and p_T-range of secondary tracks for two example B-decays channels



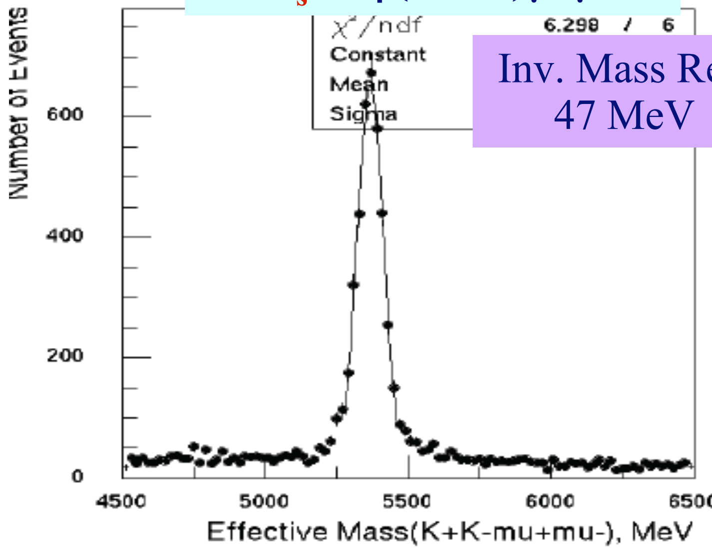


Proper-time resolution for representative B-decays		
Detector layout	Final '2005	Early '1998
$B_s \rightarrow D_s \pi$	99 fs	66 fs
$B \rightarrow \mu\mu$	101 fs	69 fs
$B_s \rightarrow J/\psi\ (\mu\mu)\ \phi$	96 fs	63 fs

Examples of Invariant Mass Reconstruction

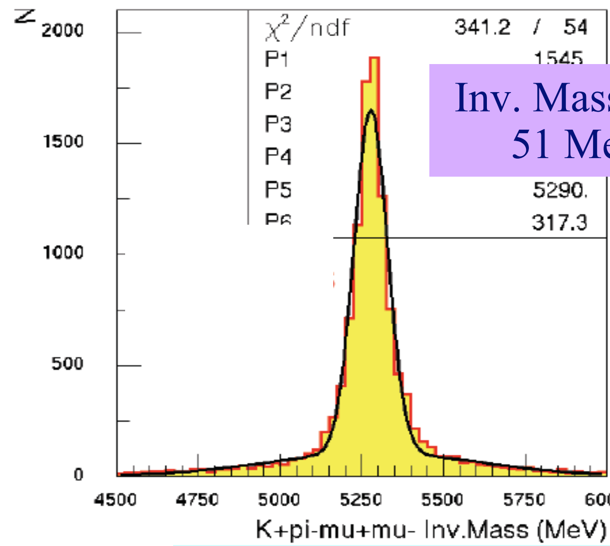
Reconstruction of
$B_s \rightarrow \phi(K^+K^-)\mu^+\mu$

Inv. Mass Res.
47 MeV



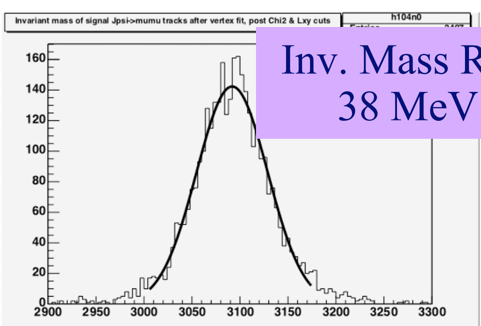
Reconstruction of
$B_d \rightarrow K^{*0}(K^+\pi^-)\ \mu^+\mu^-$

Inv. Mass Res.
51 MeV



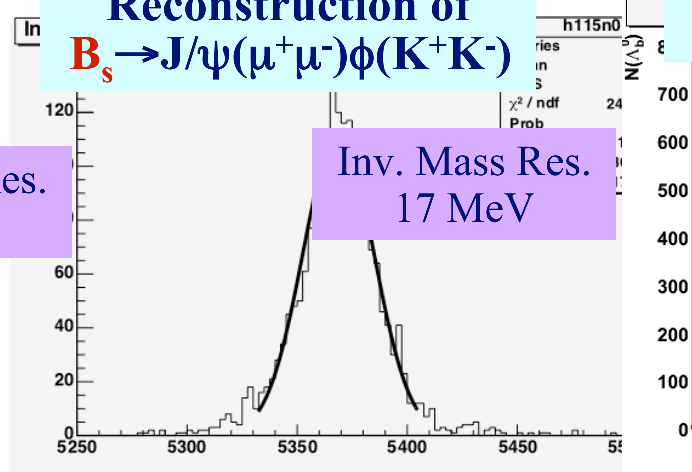
Reconstruction of
$B_s \rightarrow J/\psi(\mu^+\mu^-)\phi(K^+K^-)$

Inv. Mass Res.
38 MeV



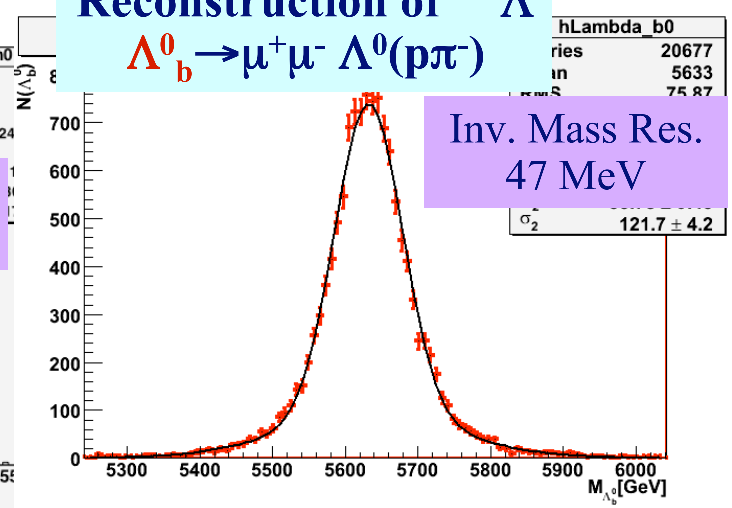
Reconstruction of
$B_s \rightarrow J/\psi(\mu^+\mu^-)\phi(K^+K^-)$

Inv. Mass Res.
17 MeV



Reconstruction of Λ
$\Lambda^0_b \rightarrow \mu^+\mu^-\ \Lambda^0(p\pi^-)$

Inv. Mass Res.
47 MeV



ATLAS Preparation for Measurements of B-decays

		Signature after trigger + offline reconstruc-tion of simulated evts. $3y@10^{33}cm^{-2}s^{-1}$		Models used in Generation or to confront experimental sensitivities.
		Signal	Backgr	
$B_s \to J/\psi\ \phi$ $B_s \to J/\psi\ \eta$	$\Delta\Gamma_s$, ϕ_s	300k 9000	30% <100% *)	SM: Fleisher CERN-TH-2000-101 NP: Ball,Khalil, Phys.Rev.D69:115011,2004
$B_s \to D_s\ \pi$ $B_s \to D_s a_1$	Δm_s	8250 4060	<100% <100%	NP: Ball,Khalil, Phys.Rev.D69:115011,2004
$B^0 \to J/\psi\ K_s$	$\sin 2\beta$ + ϕ_{NP}	250k	15%	
$\Lambda_b \to J/\psi\Lambda$ $B^+ \to J/\psi\ K^+$	direct CPV + ϕ_{NP}	75k 1,2M	7% 15% *)	Chou, Shih, Lee, Phys.Rev.D65,2002
$B_d \to K^{0*}\gamma$ $B_s \to \phi\gamma$	Br.fraction Ang. Distr.	10000 3400	$S/\sqrt{B} > 5$ $S/\sqrt{B} > 7$	Ali, Braun, Simma, Z.Phys.C63,1994; Melikhov, Stech, PRD62,2000 WC SM : Buras, Munz, PRD52, 1995.

Large effects from NP expected

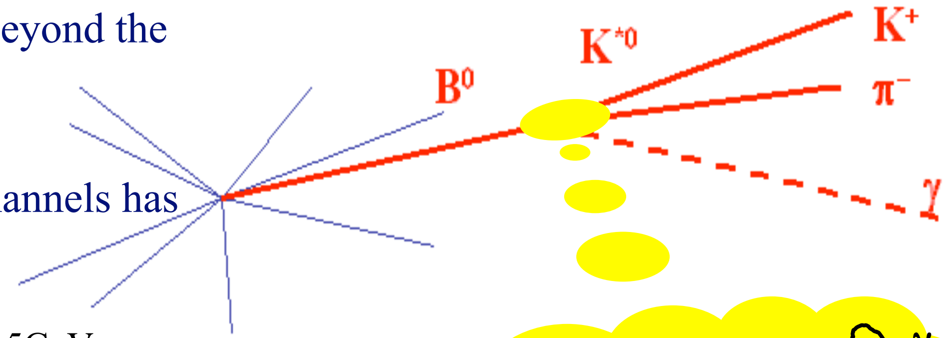
Possible NP <10%

**) TDR*

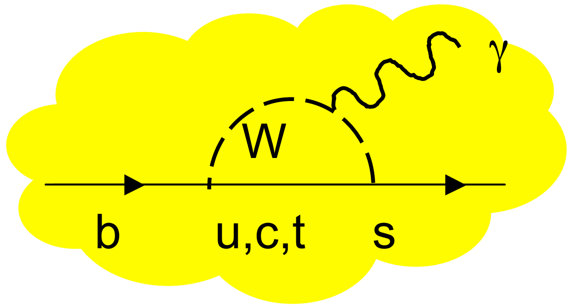
Others with New Detector Layout

Radiative Penguin Decays in ATLAS

- Studies of the decays $B_s \rightarrow \phi\gamma$ and $B_d \rightarrow K^{0*}\gamma$ can potentially show large effects from physics beyond the standard model



- A complete trigger strategy to select these channels has been studied showing that at a luminosity of 1.10^{33} cm^{-2}s^{-1} the output rate is controllable
  - LVL1: μ $p_T > 6$GeV + secondary EM RoI $E_T > 5$GeV
  - LVL2: γ identification and reconstruction of K^{*0} and ϕ
  - EF: Inv. Mass cuts and vertex reconstruction

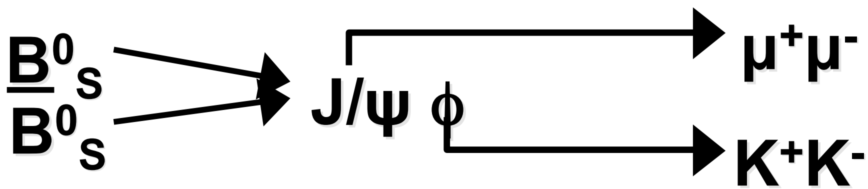


- An important ingredient is the rejection of $B \rightarrow K^{0*}\pi^0$
  - Good π^0/γ separation
    - Data were collected at the test-beam in 2004 for a dedicated study of this

- The estimated yield for an integrated luminosity of 30 fb^{-1} after trigger and offline selection cuts is (BR= $4.3.10^{-5}$)
  - **$B_s \rightarrow \phi\gamma$: 3400 events with $s/\sqrt{B} > 7$**
  - **$B_d \rightarrow K^{0*}\gamma$: 10000 events with $s/\sqrt{B} > 5$**

Should allow us to do studies of differential decay angular distributions, where large effects from physics beyond the SM can be shown

Looking for New Physics with $B_s \to J/\psi\phi$



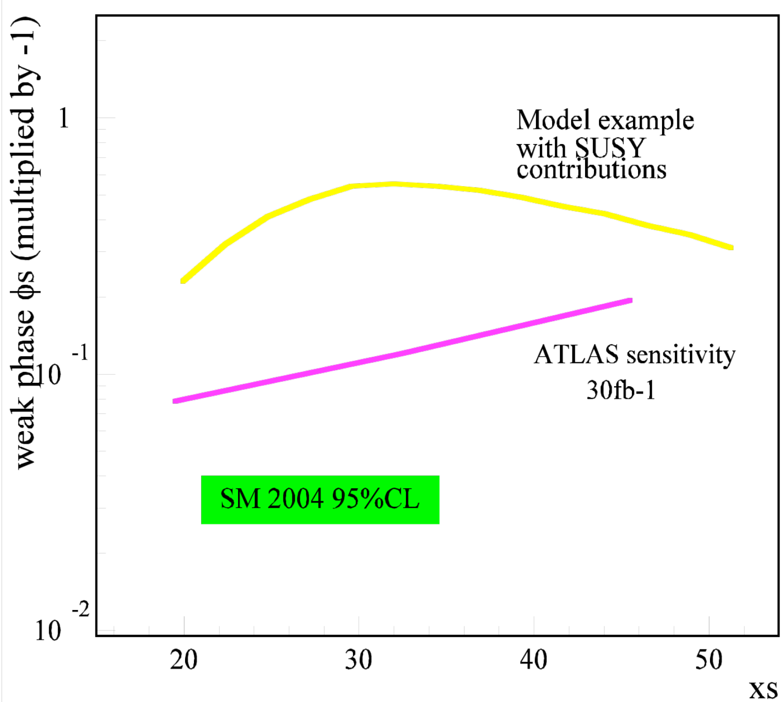
Extracting mixing parameters requires separation of CP eigenstate amplitudes

Scalar to Vector+Vector decay

Require the determination of the helicity amplitudes

Fit to angular distribution of the decay and also to the proper time and tag determines simultaneously

$A_{||}(t=0)$, $A_T(t=0)$, δ_1, δ_2, Δm_s, $\Delta\Gamma_s$, Γ_s and $\phi_s = -2\lambda^2\eta$ 8 parameters!



- No sensitivity to Standard Model values of ϕ_s
- New physics (e.g. some regions of SUSY parameter space) could lead to enhanced and measurable CP violation
  - Study of this “Golden Channel” in ATLAS should provide a rich yield of interesting data

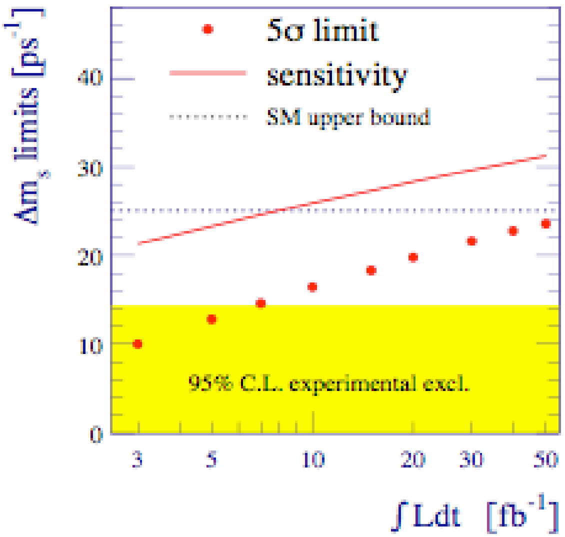
Uncertainties on ϕ_s are a function of $x_s = \Delta m_s / \Gamma_s$

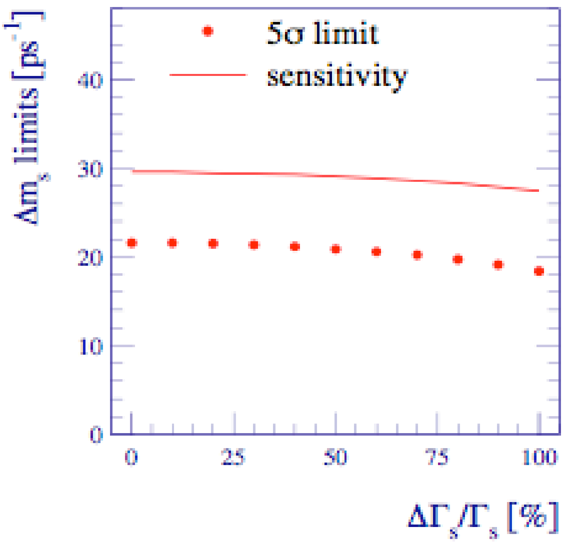
x_s fixed: can be determined with $B_s \to D_s\pi$

Sensitivity to Δm_s with $B_s \rightarrow D_s\pi$

Luminosity (fb^{-1})	5σ limit (ps^{-1})	95% C.L. sensitivity (ps^{-1})
5	12.8	23.3
10	16.4	25.9
20	19.8	28.3
30	21.5	29.5

$\Delta\Gamma_s/\Gamma_s$ (%)	5σ limit (ps^{-1})	95% C.L. sensitivity (ps^{-1})
0	21.5	29.5
50	20.9	29.1
100	18.4	27.4





- No dependence on $\Delta\Gamma_s/\Gamma_s$
  $\Rightarrow$ Δm_s can be determined independently
- From 10 fb^{-1} of integrated luminosity ATLAS has 95 % C.L. sensitivity in the region claimed by the SM

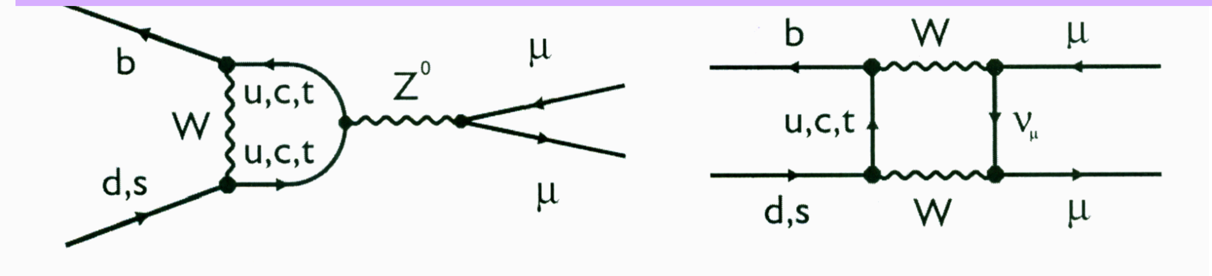
ATLAS Preparation for Measurements of B-decays

BR used in the MC			Signature after trigger +offline reconstruction of simulated evts $3y@10^{33}cm^{-2}s^{-1}$		Models used in Generation or to confront experimental sensitivities.
			Signal	Backgr	
$1.3\ 10^{-6}$	$B_d \to K^{0*}\mu\mu$	Br. fraction $\mu\mu$-mass A_{FB}	3000	<3000	**Melikhov, Nikitin, Simula, PRD57,98;**
$1.0\ 10^{-7}$	$B_d \to \rho\ \mu\mu$		300	1000	**Melikhov, Stech, PRD62, 2000**
$1.0\ 10^{-6}$	$B_s \to \phi\ \mu\mu$		900	<3000	**WC: SM Buras, Munz, PRD52, 95;** **MSSM Cho, Misiak,Wyller, PRD54,96.**
$2.0\ 10^{-6}$	$\Lambda_b \to \Lambda\mu\mu$		1500		**NP: Chen, Geng, PRD64,2001** **Aliev NPB649,2003**
(s)$1.9\ 10^{-8}$ (d)$\sim 10^{-10}$	$B_{d,s} \to \mu\mu\gamma$,		particle level		**Melikhov, Nikitin, PRD70, 2004** **WC: SM Buras, Munz, PRD52, 1995.**
$3.5\ 10^{-9}$	$B_s \to \mu\mu$	Br. fraction	21	<60	**Ali, Greub, Mannel, DESY-93-016.**
$0.9\ 10^{-10}$	$B_d \to \mu\mu$		$3.\ 10^{-10}$ at **$1y@10^{34}cm^{-2}s^{-1}$**	95%CL	

Large effects from NP expected

Potential for Measurements of Rare Decays

Doubly Muonic B decays occur only at loop level in SM



$B_s \rightarrow \mu^+\mu^-$

- SM BR prediction is $\sim 10^{-9}$
- ATLAS expects to reconstruct ~21 events with a background of less than 60 events

$B_d \rightarrow \mu^+\mu^-$

- SM BR prediction is $\sim 10^{-10}$
  - This channel can only be seen before LHC if drastically enhanced
- ATLAS can perform a high sensitivity study and measure a BR of 3.10^{-10} at 95% C.L. after one year running at a luminosity of 1.10^{34} $cm^{-2}s^{-1}$

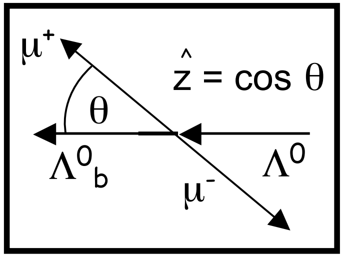
A study proved good performance of these channels at the nominal LHC luminosity

$\Lambda_b \rightarrow \Lambda\mu\mu$, $B \rightarrow K^*\mu\mu$

- The BR of these decays will be (or have been) measured before the LHC
  - However, there might not be enough statistics to measure the angular distributions precisely, where New Physics effects can be seen and constraints to different New Physics Models might be obtained

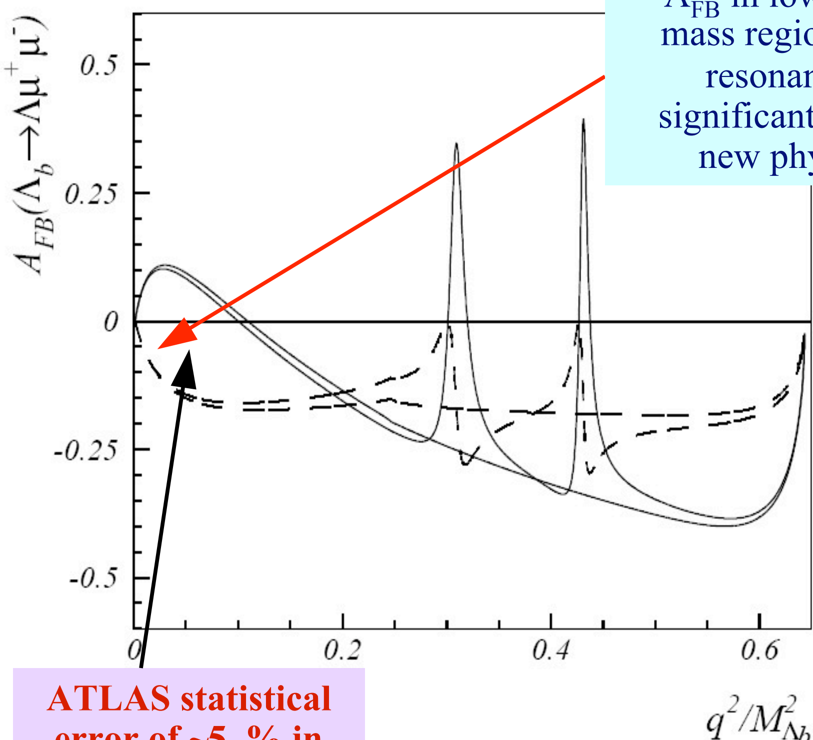
Sensitivity to New Physics in Doubly-muonic Rare Decays

ATLAS statistics will allow angular analysis that can show evidence for new physics and, in some cases distinguish between different models

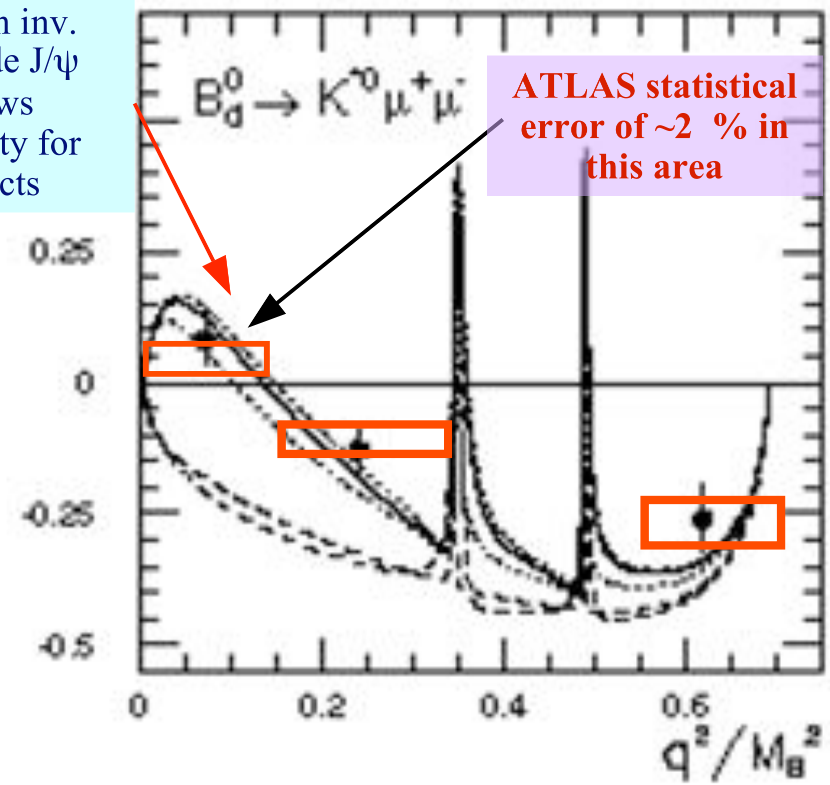


$$A_{FB}(s) = \frac{1}{d\Gamma/ds}\int_0^1 \frac{d^2\Gamma}{ds\,d\cos(\theta)}\,d\cos(\theta) - \int_{-1}^0 \frac{d^2\Gamma}{ds\,d\cos(\theta)}\,d\cos(\theta)$$

A_{FB} in low di-muon inv. mass region (outside J/ψ resonances) shows significant sensitivity for new physics effects



ATLAS statistical error of ~5 % in this area



ATLAS statistical error of ~2 % in this area

ATLAS Accuracy 2005

ATLAS Preparation for Measurements of B-production

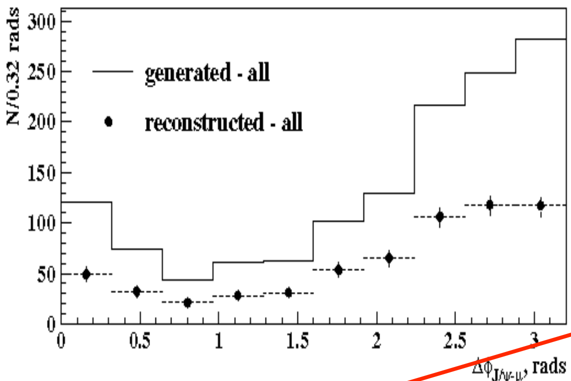
			Signature after trigger + offline reconstruction 3y @$10^{33}cm^{-2}s^{-1}$	Models used in Generation or to confront experimental sensitivities.
NLO QCD	$B \rightarrow \mu X$ + $B^+ \rightarrow J/\psi K^+$ $B_s \rightarrow J/\psi \phi$ $B^0 \rightarrow J/\psi K_s$	ϕ (b-b) corelations	30k/chan	**Pythia** **Mangano,Nason,Ridolfi: NLOQCD**
b-quark and B-hadron polarization	$\Lambda_b \rightarrow J/\psi\Lambda$ $\Xi_b \rightarrow J/\psi\Lambda$	Polarization $\alpha_{\Lambda b}$	75k 3800	**Chou, Shih, Lee, Phys.Rev.D65,2002**
Doubly Heavy flavour hadrons	$B_c \rightarrow J/\psi\pi$	Production, decay mechanisms, spectroscopy	10k *)	**Driouichi, Comp.Phys.Comm.159,2004**
Colour Octet model	$pp \rightarrow J/\psi X$	Polarization, Cross section	10Hz *) prescale	**Coloma, Sanchis-Lozano, Phys.Lett.B406:232-236,1997**

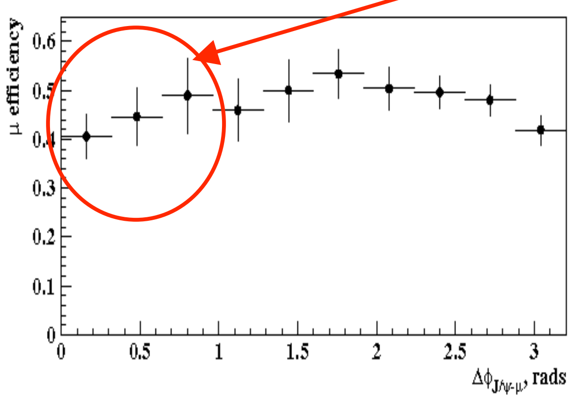
***) DC1**

b-b Production Correlations

ATLAS - proposal for measuring b-b production correlations using exclusive B-decays and semileptonic decays to muons

$B \to \mu\ B_d \to J/\psi K_s^0$

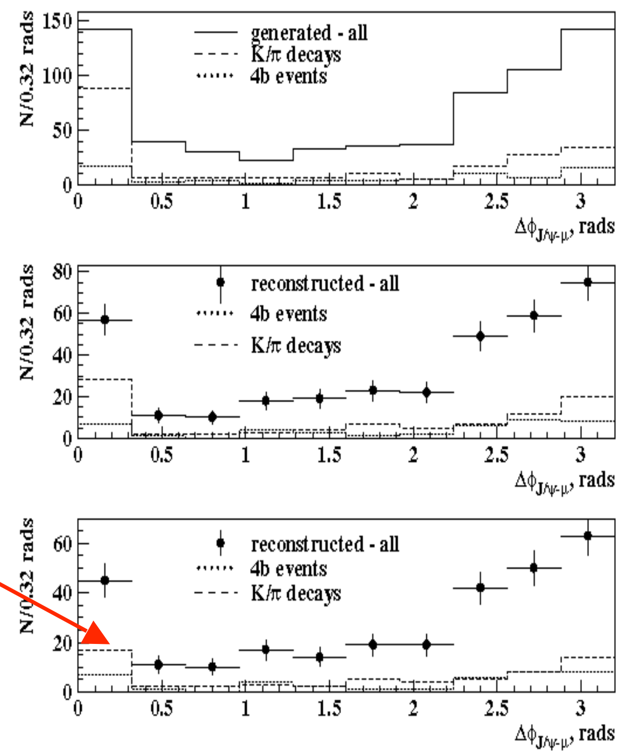




$$\Delta\phi = \phi_{J/\psi} - \phi_{\mu}$$

No degradation of efficiency as b-b close in space.

$B \to \mu\ B_s \to J/\psi\phi$



In B_s case, there is a specific background of $K \to \mu$ originating from s-quark associated with B_s production. Need to study $B \to e\ B_s \to J/\psi\phi$

Summary

- The ATLAS detector is being installed and getting ready for the first physics run in 2007
- B-physics is and will be very active (both theoretical and experimental) in the next years.
  - There is remarkable progress in the B-factories that allow one to constraint the sum of the angles of the unitarity triangle up to a 10% level
  - New decay channels may become interesting in the next years
- ATLAS strategy for B-physics is to concentrate efforts on
  - Measurements that can show New Physics effects or constrain New Physics models
  - Measurements where CP violation effects are predicted to be small in the SM
  - Measurements where we can make a significant contribution

Summary

- We have developed an strategy for triggering in B-physics that can be used in low and high LHC luminosity operation
  - We have made detailed simulations of the full trigger chain, starting from LVL1 trigger and realistic raw data, within the constraints of rate and computing resources at each trigger level
  - Based on regions of interest in the first-level trigger for low p_T muons (and also extendable to low p_T electrons, photons and jets)
  - With a trigger flexible enough to increase the bandwidth for B-physics as the luminosity drops along the LHC coast
  - Where some channels can be studied even at luminosities as high as 10^{34} cm^{-2} s^{-1}

- We also work in special software tools for B-physics to allow fast analysis from start up

- We will make detailed studies of the mechanisms for the production of heavy-flavour particles

- We will also work in improving the precision of the CP violation parameters

We can make many measurements that will test the SM and may cover new physics and constraint different models

Other ATLAS Talks

See more details on other ATLAS talks at Beauty 2005

Rare B Decays	(Nikolai Nikitine)
B-Physics Triggers	(Natalia Panikashvili)
High-Precision measurements of B_s parameters in $B_s \to J/\psi\ \phi$	(Roger Jones)
Λ_b polarization measurement	(Michela Biglietti)