LHCb @ BHAM
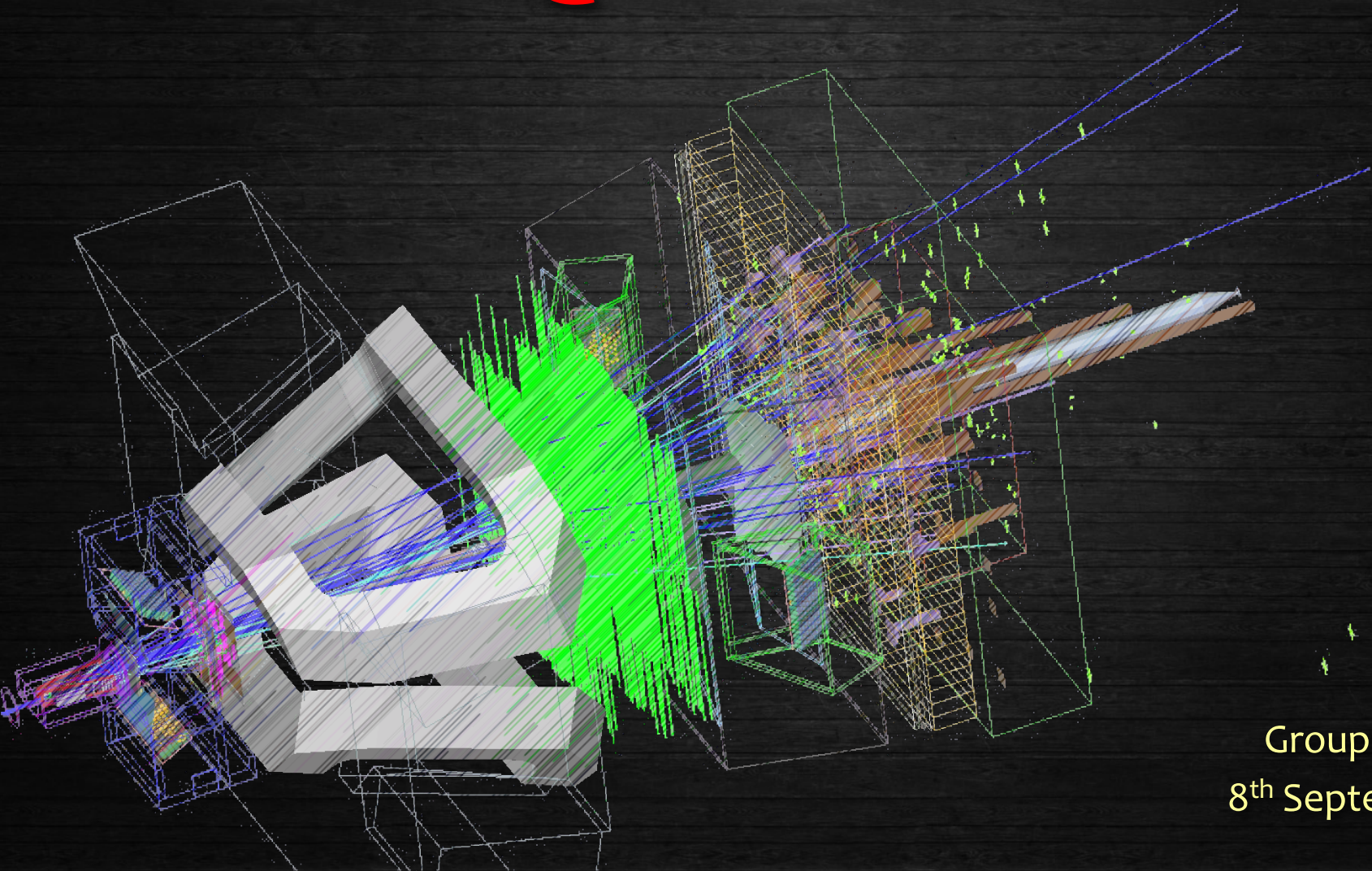
Group

Staff

Nigel (also small % ILC)

Simone

Sasha (also ATLAS)

Cristina (also NA62)

Tonino (also NA62)

Mark S (also everything)

Students

Luca Pescatore (graduated in July, starting post at EPFL (LHCb))

Pete Griffith (4th year, about to submit, to start INFN Fellowship (LHCb))

Nathanael Farley (3rd year)

Tim Williams (2nd year)

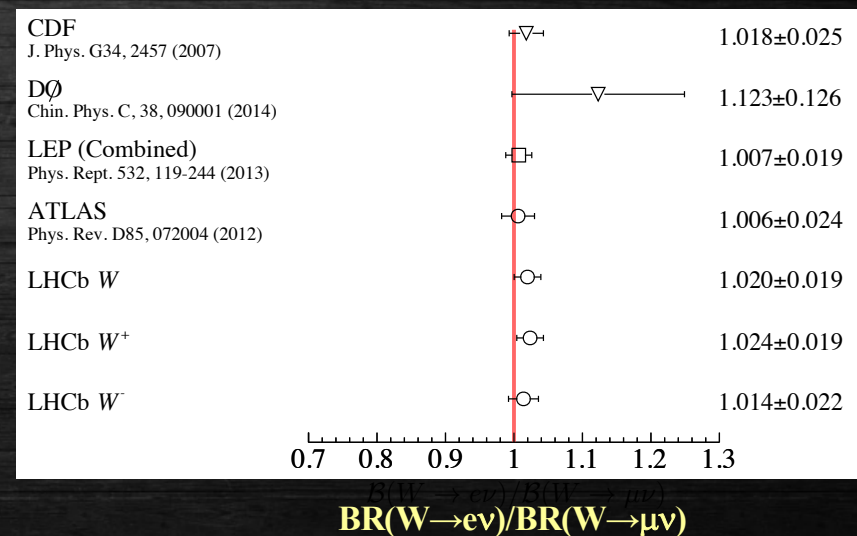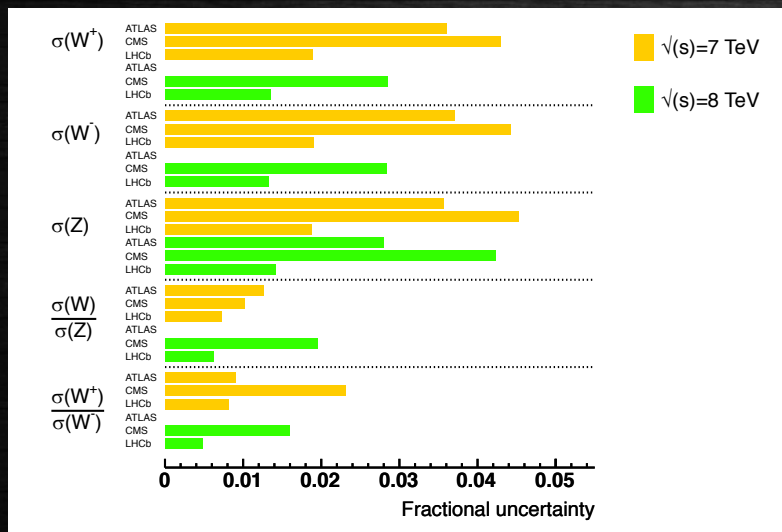Kristian Zarebski and Georgios Chatzikonstantinidis (1st year)

Activities - I

› Involved in a wide spectrum of analyses (mostly Run 1), each one expected to result in a paper

› **Rare b decays**

  » Angular analysis of $B^0 \to K^{*0}ee$ (Georgios, Simone) and $\Lambda_b \to \Lambda\mu\mu$ (Georgios, Nigel) **(TO ENTER REVIEW SOON)**

  » Test of lepton universality with $B^0 \to K^{*0}ll$ (Simone, Luca, Nigel) **(IN REVIEW)**

  » Search for $\Lambda_b \to pK\mu\mu$ (Pete, Nigel) **(TO ENTER REVIEW SOON)**

  » Test of lepton flavour violation with $\Lambda_b \to \Lambda\mu e$ (Simone)

› **Charmless b decays**

  » Search for $B^+_c \to K^{*0}K^+$ (Nathanael, Nigel)

  » Search for $\Lambda_b \to \Lambda\eta'$ (Tim, Nigel)

› **Electroweak physics**

  » $W\&Z$ production (Simone)

› **Rare kaon decays**

  » Search for $K^+ \to \pi^+\mu\mu$ (Kristian, Cristina, Tonino) **(PROSPECTS @ KAON16)**

Recent Publications

› **Measurement of the forward $W \to e\nu$ production in pp collisions at √s=8TeV**

» submitted JHEP [arXiv:1608.01484]

› **Measurement of the forward Z boson production cross-section in pp collisions at √s=13TeV**

» submitted to JHEP [arXiv:1607.06495]

› **Measurement of forward W and Z boson production in association with jets in proton-proton collisions at √s=8TeV**

» JHEP**05**(2016)131 [arXiv:1605.00951]

› **Measurement of forward W and Z boson production in pp collisions at √s=8TeV**
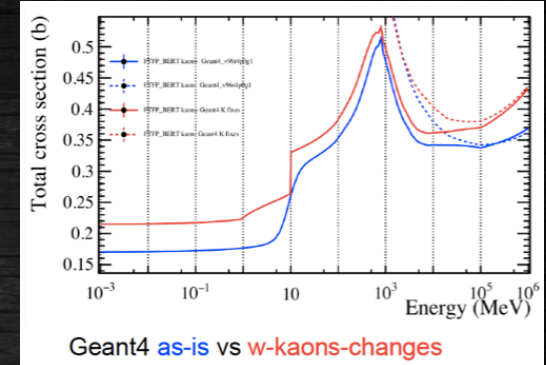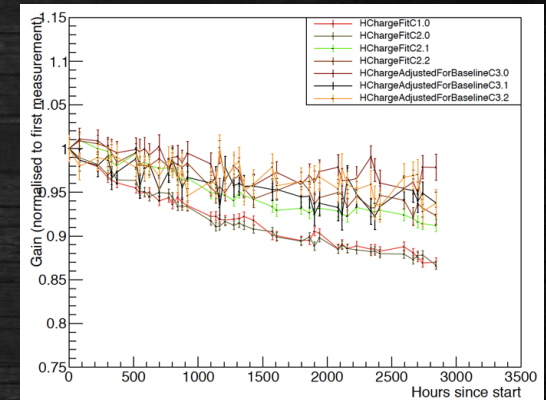
» JHEP**01**(2016)155 [arXiv:1511.08039]

Activities - II

› **Geat4 validation** (in LHCb)
  » Release management (Nigel)
  » Framework (Sasha)
  » Electromagnetic/Hadronic tests (Georgios, Tim)

Geant4 as-is vs w-kaons-changes

› **RICH upgrade**
  » PMT ageing tests (Tonino, Nat)
  » Coordination of system integration tests (Tonino)

› **LS3 ECAL Upgrade**
  » Simulation studies of high granularity ECAL, Shashlik or SiW (Georgios, Nigel)

› **Distributed analysis support and Ganga development** (Mark)
› **Physics WG liaisons** (Tim, data pre-filtering)
› **Paper reviewing and shifts**