Contribution ID: **80** Type: **not specified**

Mixing and CP violation in the Bs system at LHCb (15' + 5')

Thursday 9 June 2011 15:35 (20 minutes)

The determination of the CP-violating phase Φs in Bs0 -> J/ Ψ Φ decays is one of the key goals of the LHCb experiment. Its value is predicted to be very small in the Standard Model but can be significantly enhanced in many models of new physics. To perform the first LHCb analysis of Φs on 2010 data at a centre-of-mass energy of 7 TeV, many milestones needed to be achieved first, such as the measurements of the b-hadron lifetimes, the optimization and calibration of the flavour-tagging algorithms, the measurement of the polarization amplitudes in B0 -> J/Ψ K*0 decays, of the Bs mixing frequency Δms and of the CP asymmetry in B0 -> J/Ψ KS. We will present our result of the first Φs analysis and related measurements. Additionally we will show signals of several Bs decay modes that have been observed for the first time at the LHCb experiment and which can potentially be used to extract information on Φs such as Bs0 -> J/Ψ f0 or Bs0 -> K*0 anti-K*0.

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Session Classification: 4C Parallel - B, charm and onia