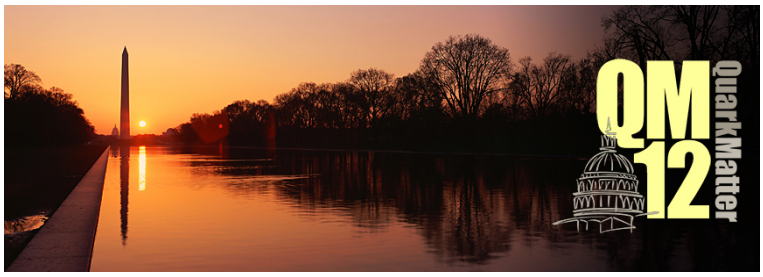

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D*-hadron azimuthal correlations in pp collisions at $\sqrt{s} = 7TeV$ with ALICE

Thursday 16 August 2012 16:00 (2 hours)

Due to their relatively high mass, heavy-flavour quarks, produced in high-energy heavy-ion collisions, are sensitive probes of the interaction dynamics inside the hot and dense QCD matter.
Since heavy quarks are produced in pairs during the initial stage of the collision, before the formation of the QGP, the measurement of heavy-flavour hadron production provides profound information on the properties of the produced medium. A detailed understanding of the pair production mechanisms in proton-proton collisions is interesting both as a QCD test tool as well as a reference for future heavy-ion studies.
This particular physical process can be investigated using the angular azimuthal correlation between open-charmed mesons and charged hadrons. This correlation exhibits characteristic near-side and away-side structures that are produced by the charged hadrons from the fragmentation and decay of the partner charmed meson. The azimuthal direction is expected to be sensitive to the heavy quark production mechanism and can be compared to the perturbative QCD calculations.
D mesons are reconstructed in several hadronic channels in the ALICE experiment at the LHC. Using $D*^{\pm}$ mesons is advantageous because they can be selected with higher purity with respect to D0 and D^{+}. Correlating with kaons (identified $K^{\pm}$ or reconstructed $K0_S$) that are produced with high probability in charm decays, provides a reduction of the background in the correlation distribution.
In this contribution results of this correlation analysis, performed using the minimum bias proton-proton collisions at $\sqrt{s} = 7TeV$ collected by the ALICE experiment in 2010, will be presented.

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