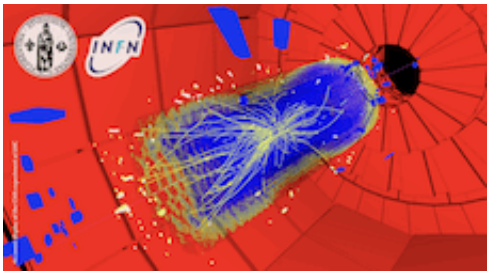

Contribution ID: **59** Type: **Talk**

Performance of the ALICE Inner Tracking System and studies for the upgrade.

Wednesday, 6 July 2011 11:20 (20 minutes)

The Inner Tracking System (ITS) of the ALICE experiment is made out of six layers of silicon detectors exploiting three different technologies (pixel, drift and strip). It covers the central pseudorapidity range of $|\eta| < 0.9$ and its distance from the beam line ranges from r = 3.9 cm for the innermost pixel layer up to r = 43 cm for the outermost strip layer. The main tasks of the ITS are to reconstruct the primary and secondary vertices with high resolution; to track and identify charged particles with a low pt cutoff as a standalone tracker; to improve the momentum and angle resolution for tracks reconstructed in the outside tracking detectors.
In this talk I will present the performance of the ITS in p-p and Pb-Pb collisions in 2010, both from the hardware point of view, with a brief overview of the features of the system, and the physics achievements for what concerns the vertexing, the tracking and the particle identification.
Furthermore, I will give an outlook on a possible upgrade of the ALICE ITS which is presently being studied, in order to extend its physics performance by improving the measurements of charmed hadrons and accessing new physics items like the measurement of the beauty hadrons.

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