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## Multiplicity and rapidity dependence of strangeness and multi-strangeness production in pp, pPb and PbPb at CMS

*Monday, 28 September 2015 11:35 (20 minutes)*

Measurements of transverse momentum ( $p_T$ ) spectra for strange ( $K_s^0$  and  $\Lambda$ ) and multi-strange ( $\Xi^-$ ) hadrons are presented over a wide range of multiplicity and particle rapidity in pp, pPb and PbPb collisions. The data were recorded using the CMS detector at the LHC, with an implementation of high-multiplicity triggers for pp and pPb collision data. The particle ratios, the total strangeness yields and average  $p_T$  of particle spectra for each species are extracted as a function of multiplicity and compared among different collision systems. Motivated by collective flow phenomena from a fluid-like QGP system, a blast-wave model is employed to explore the system size dependence of radial flow strength among various systems. Furthermore, the wide acceptance coverage of the CMS detector enables a study on rapidity dependence of strange particle  $p_T$  spectra, especially in asymmetric high-multiplicity pPb collisions, which places stringent tests on theoretical models interpreting particle production mechanism in these collisions. The new results presented provide key insights to understand the underlying dynamics in high-multiplicity small systems.

### **On behalf of collaboration:**

CMS

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