

# 12th International Conference on Hard and Electromagnetic Probes of High-Energy Nuclear Collisions



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Type: **Oral presentation**

## Understanding initial and final states with charm meson pair and charm baryon production in pPb collisions with CMS

*Monday 23 September 2024 14:00 (20 minutes)*

Recent research suggested that hot nuclear matter phenomena also occur in small systems in the charm sector. To deepen the understanding of the source of such phenomena, we will present the charm hadron production in pPb collisions, focusing on the  $\Lambda_c$ -to- $D^0$  ratio in different multiplicities to examine the hadronization mechanisms. The results are also compared to the light and the strange sectors in different collision systems. To further investigate the initial state effects in nuclear collisions, we will report the first observation of double  $J/\psi$  production and the first measurement of double D meson productions in pPb collisions. . These new results impose important constraints on the models from initial to final states, providing essential information for understanding the heavy quark behaviors in small systems.

### Category

Experiment

### Collaboration

CMS

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