**Physics motivation**

- The Quark Gluon Plasma (QGP) is produced in heavy ion collisions at LHC;
- Heavy quarks (charm and beauty) are a unique probe due to their large masses, they are produced mainly via hard parton scattering before the QGP formation and therefore they witness the full evolution of the system;
- Charm and beauty quarks are expected to lose energy in the medium via collisional and radiative processes. Both collisional and radiative energy loss are expected to be smaller for beauty quarks due to the mass dependence;
- The Nuclear modification factor ($R_{AA}$) is sensitive to the energy loss of quarks in the medium:
  \[ R_{AA} = \frac{dN_{AA}/d\eta}{(T_{AA})d\sigma_{pp}/d\eta} \]

**ALICE apparatus**

- The analysis is based on 9M central Pb-Pb events collected during LHC run II;
- Particle Identification: Time Projection Chamber (TPC) and Time-Of-Flight (TOF);
- Tracking: Inner Tracking System (ITS) and TPC;
- Trigger: V0 scintillators;

**Inclusive electron identification**

In order to perform the identification of inclusive electrons, the information of the specific energy loss in the TPC is used. In order to remove the contamination by kaons and protons in this sample, a cut on the time-of-flight of the particles measured by the TOF detector is applied.

The inclusive electrons are selected by the TPC PID cut $-0.1 < dE/dx - <dE/dx>_e < 3$ and by the TOF PID cut $|n_\sigma^{TOF}| < 3$.

**Yield and $R_{AA}$ of electrons from beauty hadron decays**

- The invariant yield of $b \rightarrow c \rightarrow e$ is measured in Pb-Pb collisions at 5.02 TeV;
- The $R_{AA}$ shows good agreement with run 1 measurement;
- Indication of smaller suppression of $b \rightarrow c \rightarrow e$ with respect to $b,c \rightarrow e$;
- Measurement consistent with models that consider mass-dependent radiative and collisional energy loss;

**References**