



Contribution ID: 19

Type: **not specified**

## Inferring QGP parameters with heavy flavor probes

*Saturday, 16 July 2022 14:00 (20 minutes)*

High-pt theory and data are traditionally used to explore parton interactions with QGP, while QGP parameters are commonly constrained through low-pt data and corresponding models. However, rare high-pt probes can also be a powerful tool for inferring bulk QGP properties, providing a proper description of high-pt parton-medium interactions.

We here advocate a novel QGP tomography approach, which employs our finite-temperature dynamical energy loss framework. The main idea is to constrain QGP parameters by exploiting both low and high-pt data. We can use any set of QGP parameters consistent with low-pt observables and: i) Generate the corresponding temperature profile, ii) Implement this profile in the dynamical energy loss framework and generate corresponding high-pt predictions. iii) Test these predictions against high-pt data to further constrain QGP parameter values. We show that heavy flavor observables are particularly sensitive within this approach and can be used to i) constrain the early evolution of QGP, ii) infer geometrical properties of bulk QCD medium, iii) explore if QGP in small systems is consistent with high-pt data.

**Primary authors:** DJORDJEVIC, Magdalena; STOJKU, Stefan; ZIGIC, Dusan; AUVINEN, Jussi; SALOM, Igor; HUOVINEN, Pasi

**Presenter:** DJORDJEVIC, Magdalena

**Session Classification:** Heavy-flavour jets as QGP probes