

# Hard Probes 2018: International Conference on Hard & Electromagnetic Probes of High-Energy Nuclear Collisions

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Type: 2a) Jets and high-pT hadrons (TALK)

## Jet structure in integrated EPOS3-HQ approach

*Thursday, 4 October 2018 11:45 (20 minutes)*

A consistent modelling of back reaction of the medium on the jet evolution is important for understanding the jet structure. Majority of existing models implement only one-way jet-medium interaction by coupling jets to a fixed hydrodynamic expansion and not including the energy deposition in the medium itself.

In this talk we show the first results of jet observables from a parton cascade integrated with hydrodynamic evolution within the EPOS3-HQ model. The hard (jet) partons are produced along with soft partons in the initial state EPOS approach. The soft partons, represented by strings, melt into thermalized medium which is described with a 3 dimensional event-by-event viscous hydrodynamic approach. The jet partons then propagate in the hydrodynamically expanding medium. The total jet energy gets progressively “degraded” as the partons reaching a certain lower cut off are melted into the hydrodynamic medium via the source terms. The full evolution proceeds in a concurrent mode, without separate thermalized and jet parts.

We demonstrate how the medium modification effects on the jets, and also how the medium recoil alters the jet structure. Also we discuss the dependence of this effect on the energy loss scenario.

### Summary

**Primary authors:** Dr KARPENKO, Iurii (SUBATECH Nantes); GOSSIAUX, Pol (Subatech); AICHELIN, Joerg (Subatech/CNRS); WERNER, Klaus

**Presenter:** Dr KARPENKO, Iurii (SUBATECH Nantes)

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