

ExtreMe Matter Institute EMMI

EMMI Workshop

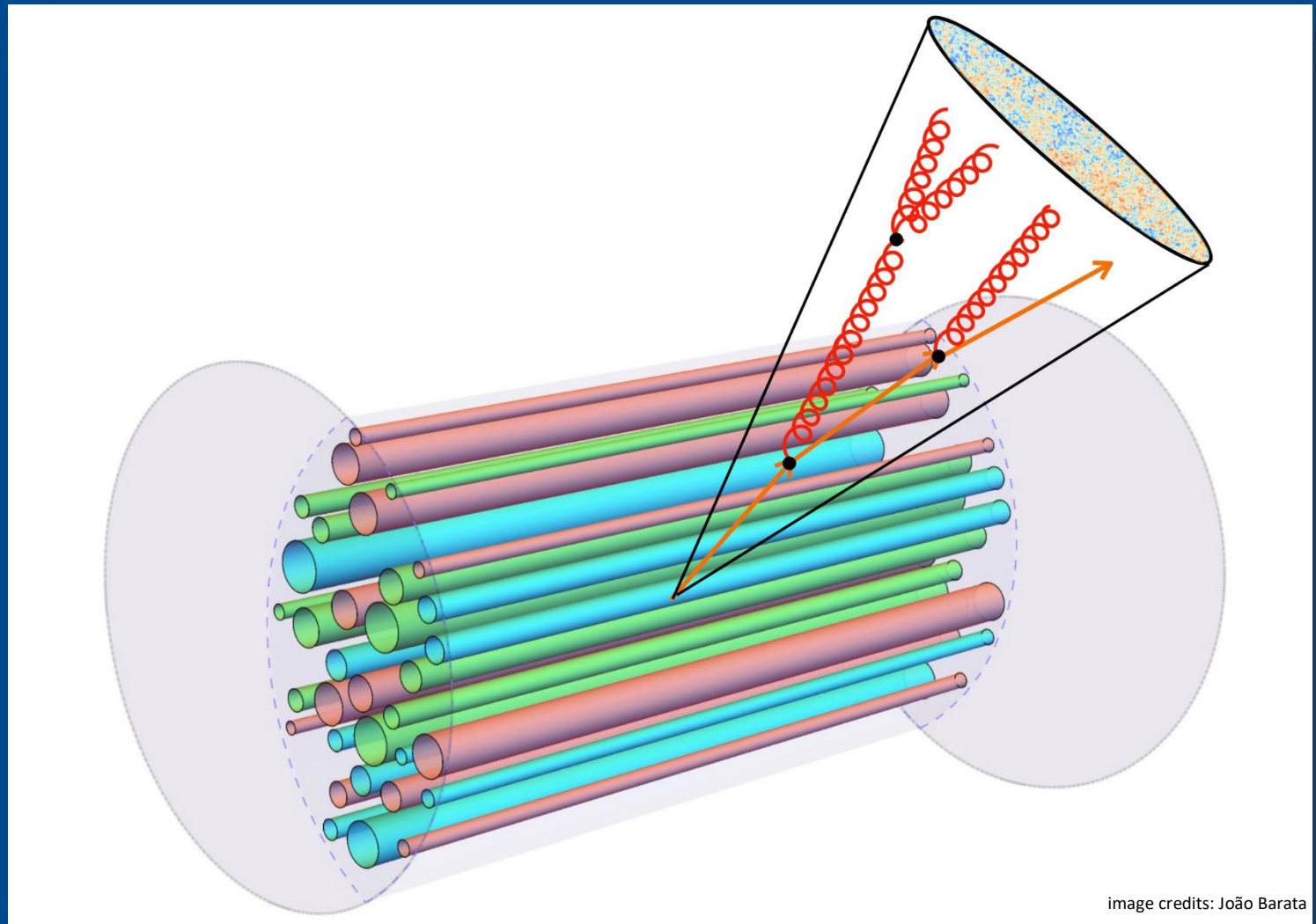
Probing the early stages with jets

July 13 – 17, 2026

GSI, Darmstadt, Germany

Key Goals:

- Bringing together the jet quenching and the initial stages communities
- Identifying observables which can be theoretically calculated and experimentally measured



Jets are among the key probes of the quark-gluon plasma (QGP) produced in high-energy heavy-ion collisions at the LHC and at RHIC. As the jet cascade evolves in the presence of the underlying medium produced in these events, the partonic branchings are modified due to re-scattering with the QCD matter. Thus, by comparing these jets to those produced in pp events, one can hope to construct a tomographic picture of the medium and infer the dynamical properties of many-body QCD.

Although the QGP phase dominates the evolution in the aftermath of heavy-ion collisions, it is preceded by a shorter-lived but highly energetic out-of-equilibrium state. This medium, generated in parallel to the initial jet production, undergoes multiple (initial) stages during its equilibration process towards the QGP phase. Mapping the properties of these states using jets would give unique important information about the properties of QCD far from equilibrium, which can be hardly tested in any other experiment.

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Information:

www.gsi.de/emmi/workshops

Website:

<https://indico.gsi.de/event/24197/>

More about EMMI:

www.gsi.de/emmi