

## **Joint seminar of the NPI of the CAS**

19. 6. 2024

**Ing. Monika Robotková, DHIP NPI: Jet substructure measurements elucidating partonic evolution in p+p collisions at RHIC**

### **Abstract:**

Jets are multiscale objects that connect partons to hadrons, making jet substructure measurements crucial for probing both perturbative and non-perturbative processes in QCD. At STAR, a variety of jet substructure observables, such as SoftDrop groomed splittings and N-Point Energy Correlators (ENC), provide insights into parton evolution and hadronization mechanisms. SoftDrop-groomed observables and ENCs both connect measurement to fundamental QCD at the parton level, allowing for comparisons to first principles theoretical calculations. Additionally, by also including charge information, as in the charge-weighted ENC, details about the hadronization mechanism can be obtained. In this talk, we present measurements of SoftDrop observables and ENCs across different jet momenta and radii in p+p collisions at  $\sqrt{s} = 200$  GeV using STAR data.