5th International Workshop on Emergent QCD Collectivity Across Scales: From Small System Collisions to Jets

Monday, 29 June 2026 - Thursday, 2 July 2026

Rice Global Paris Center

Scientific Programme

This workshop emphasizes conceptual synthesis, open questions, and existing tensions in the field, rather than exhaustive summaries of established results. Its aim is to foster discussion of unconventional or speculative ideas, with an emphasis on clear articulation and testable implications. The topics below are illustrative rather than exhaustive. Participants are encouraged to introduce closely related ideas that advance the overarching goals of the workshop.

Emergent collectivity across systems and scales

How collective behavior arises and evolves from pp and pA to light-ion and heavy-ion collisions, and what this reveals about the relevant QCD degrees of freedom.

Small systems and non-perturbative QCD dynamics

Long-range correlations, multiparticle cumulants, flow-like observables, polarization, and femtoscopy as manifestations of strong coupling, confinement, hadronization, and many-body dynamics.

Jets as multi-scale probes of emergence

Jet substructure, jet–hadron correlations, energy–energy correlators (EECs), and related observables probing the interplay between perturbative production, factorization, and non-perturbative collective response.

Light-ion collisions as controlled laboratories

Light ions as tunable bridges between few-body QCD and macroscopic collective behavior, enabling precision tests of geometry, fluctuations, and transport.

Quantum correlations and entanglement

Early-time quantum correlations as organizing principles for multiparticle observables, and their implications for entropy production, decoherence, and universality in QCD.