



Contribution ID: 692

Type: Oral

## Anomalous kaon correlations measured in Pb-Pb collisions at the LHC as evidence for the melting and refreezing of the QCD vacuum

*Tuesday, 5 September 2023 12:00 (20 minutes)*

Measurements of the dynamical correlations between neutral and charged kaons in central Pb-Pb collisions at  $\sqrt{s_{NN}} = 2.76$  TeV by the ALICE Collaboration display anomalous behavior relative to conventional heavy-ion collision simulators. We consider other conventional statistical models, none of which can reproduce the magnitude and centrality dependence of the correlations. The data can be reproduced by coherent emission from domains which grow in number and volume with increasing centrality. We study the dynamical evolution of the strange quark condensate and show that the energy released during the expansion and cooling of the system may be sufficient to explain the anomaly.

### Category

Theory

### Collaboration (if applicable)

**Primary author:** KAPUSTA, Joseph

**Co-authors:** SINGH, Mayank (University of Minnesota); PRATT, Scott (Michigan State University)

**Presenter:** KAPUSTA, Joseph

**Session Classification:** Light Flavor

**Track Classification:** Light and strange flavor