



Contribution ID: 166

Type: Talk

## Sudden increase in the degrees of freedom in dense QCD matter

Saturday 5 September 2020 16:55 (25 minutes)

We present the extraction of the temperature by analyzing the charged particle transverse momentum spectra in lead-lead (Pb-Pb) and proton-proton (pp) collisions at LHC energies from the ALICE Collaboration using the Color String Percolation Model (CSPM). From the measured energy density  $\epsilon$  and the temperature  $T$  the dimensionless quantity  $\epsilon/T^4$  is obtained to get the degrees of freedom (DOF),  $\epsilon/T^4 = \text{DOF} \pi^2/30$ . We observe for the first time a two-step behavior in the increase of DOF, characteristic of deconfinement, above the hadronization temperature at temperature  $\sim 210$  MeV for both Pb-Pb and pp collisions and a sudden increase to the ideal gas value of  $\sim 47$  corresponding to three quark flavors in the case of Pb-Pb collisions.

### Is this abstract from experiment?

No

### Internet talk

Yes

### Name of experiment and experimental site

N/A

### Is the speaker for that presentation defined?

Yes

### Details

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