

# Strangeness in Quark Matter 2019



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## QCD Thermodynamic Geometry

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The QCD phase transition is studied within the thermodynamic geometry. Through the definition of a metric in the thermodynamic space, one builds a scalar thermodynamic geometry curvature,  $R$ , in the usual way and investigates the nature of the interactions.  $R$ , indeed, reflects some important features of the system: e.g. the so-called interaction hypothesis,  $|R| \sim \xi^d$ , where  $\xi$  is the correlation length and  $d$  the effective spatial dimension of the underlying thermodynamic system. Moreover, the sign of  $R$  seems to provide information on the system interactions (attractive or repulsive, fermionic or bosonic). We have studied  $R$  in different models: Nambu-Jona-Lasinio model with two and three flavors, Linear Sigma model, Hadron Resonance Gas model and Lattice-QCD. In all of these models,  $R$  shows a characteristic behavior, different for each transition type (if present): I or II order or crossover.

### Collaboration name

### Track

QCD phase diagram and critical point

**Author:** LANTERI, Daniele (Catania University)

**Presenter:** LANTERI, Daniele (Catania University)

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