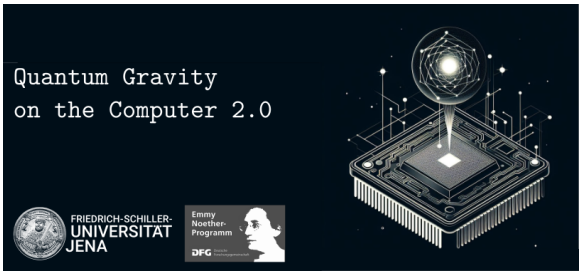

Contribution ID: **15** Type: **not specified**

Discreteness and Causality : Causal Sets on the Computer

Wednesday 11 September 2024 11:00 (1 hour)

The causal set approach to quantum gravity is a theory of locally finite posets with a very specific continuum approximation. It is motivated by a unique feature of Lorentzian geometry, namely the causal structure poset which captures the full conformal geometry. Being a discrete theory of spacetime, it lends itself rather naturally to computer simulations and numerics, albeit with a characteristic nonlocality. Because of this, the standard tools of lattice and simplicial geometry need to be replaced with those that are purely order theoretic. I will discuss the progress made over the years in both the kinematics and dynamics of causal set theory using computational methods and end with the very many open avenues left to be explored.

Presenter: SURYA, Sumati (Raman Research Institute)