Contribution ID: **20**   Type: **not specified**

Spectral Analysis of Causal Dynamical Triangulations via Finite Element Methods

Tuesday, 26 May 2020 16:10 (25 minutes)

I will describe the current state of research on the application of spectral methods to the
Quantum Gravity approach known as Causal Dynamical Triangulations (CDT).
Firstly, I will give an overview of the class of analysis methods based on graph theory
applied to the dual graphs of simplicial manifolds, arguing why they are inadequate, in some regimes,
to capture distance information, therefore distorting some of the current results (e.g., the dimensional reduction plot).
Secondly, I will present a method based on finite elements as solution to this problem, showing
a toy model where the previous method blatantly fails and some preliminary results on its application to
CDT configurations.

Presenter: CLEMENTE, Giuseppe

Session Classification: session II