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

# Adiabatic States in non-Smooth spacetimes

*Thursday, 5 October 2023 16:40 (20 minutes)*

The analysis of quantum states in non-smooth spacetimes has two main motivations. First, there are several models of physical phenomena that require spacetime metrics with finite regularity. These include models of gravitational collapse, astrophysical objects and general relativistic fluids. Second, the well-posedness of Einstein's equations, viewed as a system of hyperbolic PDE requires spaces with finite regularity. Ground states are a well-known class of Hadamard states in smooth spacetimes. In this talk, I will present our proof that the ground state of the Klein–Gordon field in a non-smooth ultra static spacetime is an adiabatic state characterised by a Sobolev Wavefront set condition that depends on the regularity of the metric

**Presenter:**   SANCHEZ SANCHEZ, Yafet (University of Genova and Istituto Nazionale di Fisica Nucleare)

**Session Classification:**   Thursday 16:40-18:00